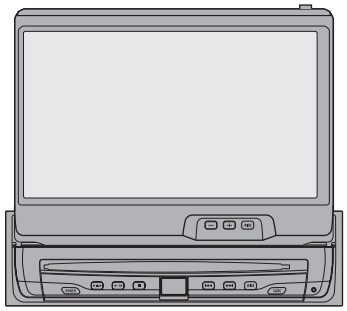
Service Manual



ORDER NO.
CRT2672

7 INCH WIDE AV SYSTEM DISPLAY/DVD PLAYER

AVX-P7300DVD UC
AVX-P7300DVD EW
AVX-P7300DVD ES/RD,ES/RC

● This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech. Module	Remarks
CX-954	CRT2670	MS2	DVD Mech. Module:Circuit Description, Mech.Description, Disassembly

NOTE:

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● **Inverter for LCD back light becomes a high voltage.**

● **About FPC between control PCB and relay unit**

There is a direction of the connector and the installation is noted.

Please note that the length of the line is short at the time of detaching.

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● **DVD Player Service Precautions**

1. Never adjust the LD VR in the pickup unit to protect the pickup from electrical damages.
2. For pickup unit(service)(CXX1530) handling, please refer to"Disassembly"(see page 109).
   During replacement, handling precautions shall be taken to prevent an electrostatic discharge(set the short switch of the pickup unit to the SHORT side).
3. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.
4. Please adjusting the skew after changing the pickup unit(see page 83).

1. SAFETY INFORMATION

1.1 UC

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.
Health & Safety Code Section 25249.6 - Proposition 65

1.2 EW

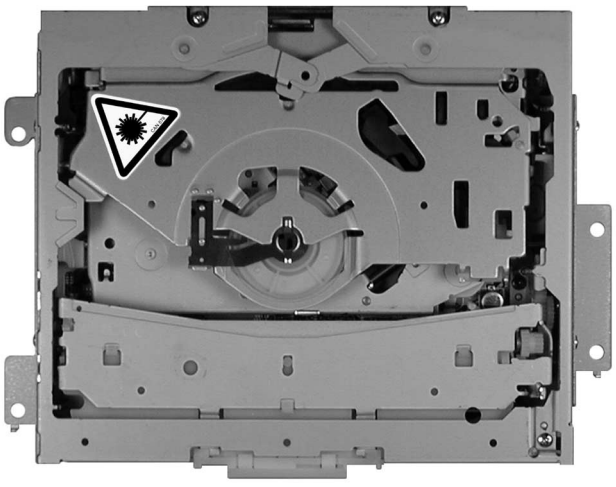
1. Safety Precautions for those who Service this Unit.

- **Follow the adjustment steps (see pages 80 through 100)in the service manual when servicing this unit. When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.**

Caution:

1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

2. The triangular label is attached to the mechanism unit frame.



CAUTION

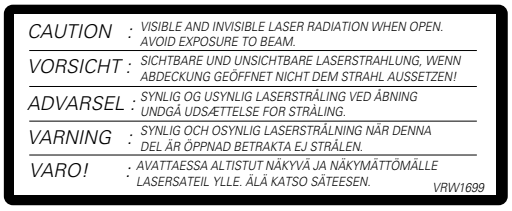
This product contains a laser diode of higher class than 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer all servicing to qualified personnel.

The following caution label appears on your unit.

Location: on the bottom of the unit

En

On the bottom of the player.


CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VORSICHT : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN!
ADVARSEL : SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARNING : SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN.
VARO! : AVATTAESSA ALTISTUT NÄKYVÄ JA NÄKYMÄTTÖMÄLLE LASERSATEIL YLLE. ÄLÄ KATSO SÄTEESEN.
VRW1699

WARNING!

The AEL (accessible emission level)of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.
A specially instructed person should do servicing operation of the apparatus.

Laser diode characteristics

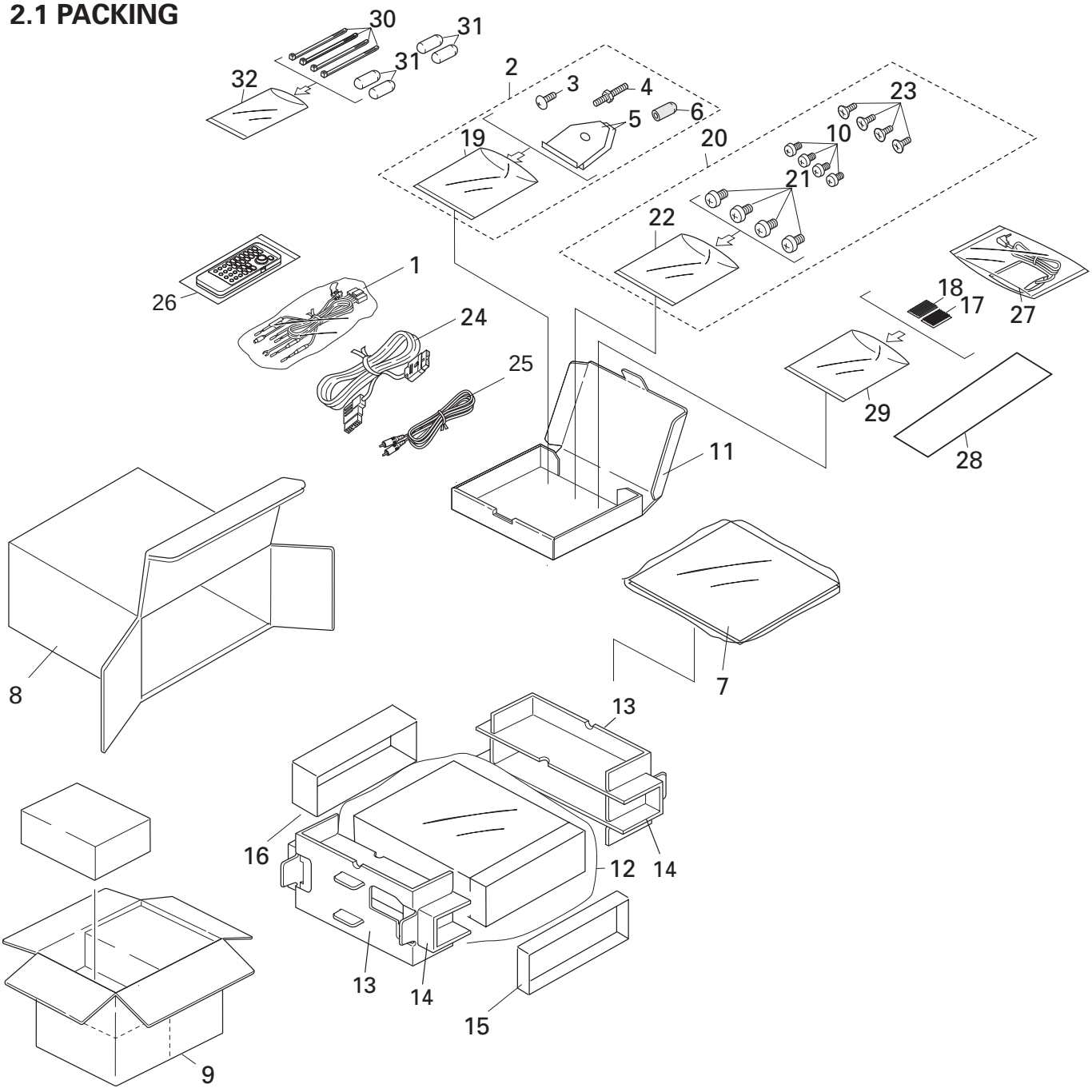
Wave length:
DVD:640~660nm
CD:770~810nm
Maximum output:2.44mw(Emitting period :9sec.)
DVD:743mw(Emitting period : unlimited)

Additionla Laser Caution

Transistors Q1104 and Q1108 in PCB drive the laser diodes for DVD and CD respectively. When Q1104 or Q1108 is shorted between their terminals, the laser diodes for DVD or CD will radiate beam. If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING



● **Owner's Manual**

Part No.	Language
CRB1707	English
CRB1708	Spanish
CRB1709	German
CRB1710	French
CRB1711	Italian
CRB1712	Dutch
CRB1713	Chinese

● **Installation Manual**

Part No.	Language
CRD3479	English,French
CRD3435	English,Spanish,Dutch ,German,French,Italian
CRB1740	English
CRD3480	English,Chinese

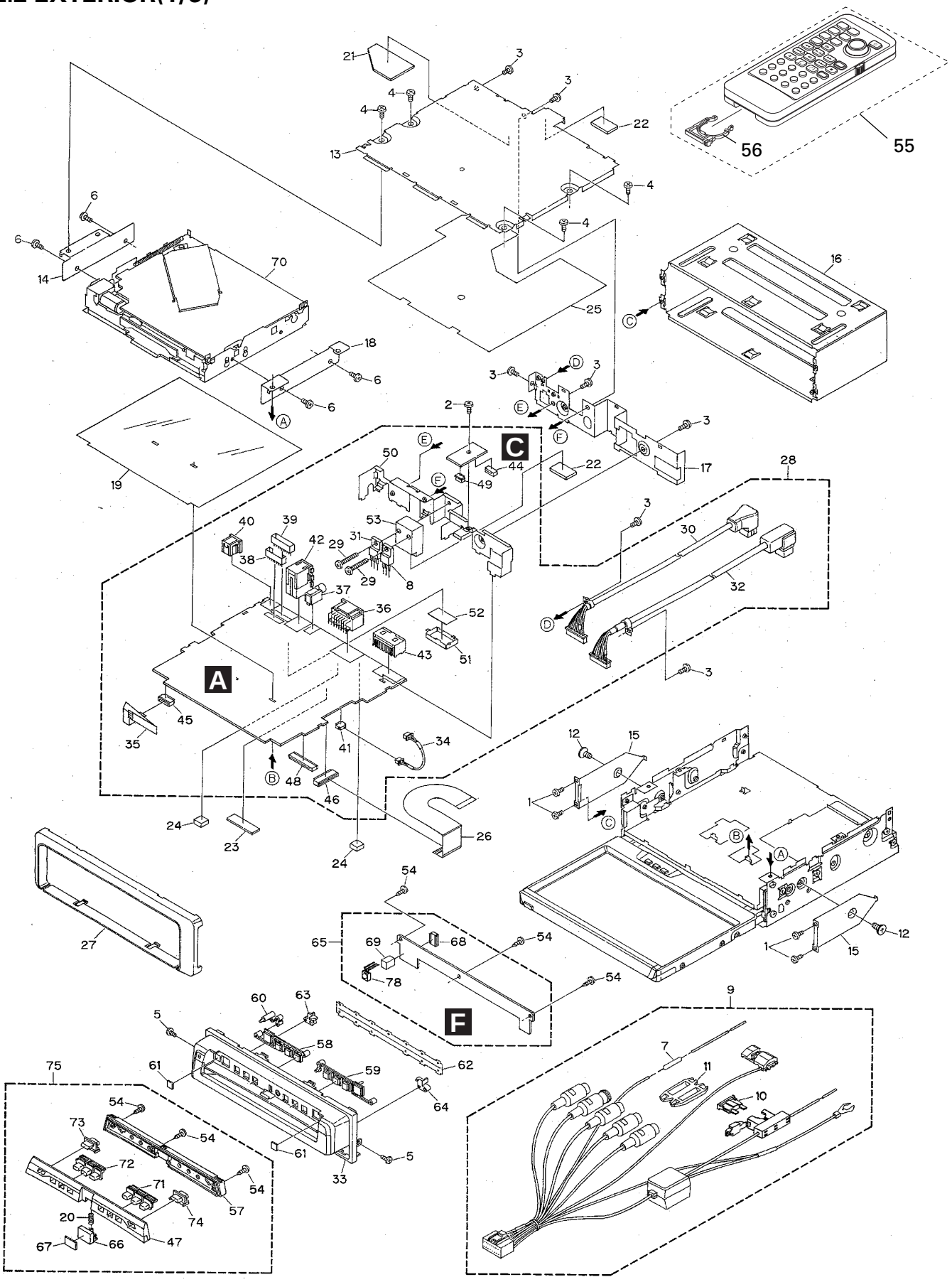
NOTE:

- Parts marked by "*"are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No. P7300DVD/UC	P7300DVD/EW	P7300DVD/ES/RD	P7300DVD/ES/RC
	1	Cord Assy	CDE6668	CDE6668	CDE6668	CDE6668
	2	Accessory Assy	CEA2876	CEA2876	CEA2876	CEA2876
	3	Screw	BPZ20P060FMC	BPZ20P060FMC	BPZ20P060FMC	BPZ20P060FMC
	4	Screw	CBA1002	CBA1002	CBA1002	CBA1002
	5	Bracket	CNC9383	CNC9383	CNC9383	CNC9383
	6	Bush	CNV1917	CNV1917	CNV1917	CNV1917
	7-1	Polyethylene Bag	CEG1116	CEG1116	CEG1116	CEG1116
	7-2	Owner's Manual	CRB1707	CRB1707	CRB1707	CRB1707
	7-3	Owner's Manual	Not used	CRB1708	Not used	CRB1713
	7-4	Owner's Manual	Not used	CRB1709	Not used	Not used
	7-5	Owner's Manual	CRB1710	CRB1710	Not used	Not used
	7-6	Owner's Manual	Not used	CRB1711	Not used	Not used
	7-7	Owner's Manual	Not used	CRB1712	Not used	Not used
	7-8	Installation Manual	CRD3479	CRD3435	CRB1740	CRD3480
*	7-9	Warranty Card	Not used	CRY1157	CRY1157	CRY1157
*	7-10	Card	ARY1048	Not used	Not used	Not used
*	7-11	Caution Card	Not used	CRP1250	CRP1250	Not used
*	7-12	Caution Card	CRP1253	CRP1253	CRP1253	CRP1253
*	7-13	Caution Card	Not used	CRP1256	Not used	Not used
	8	Carton	CHG4402	CHG4401	CHG4404	CHG4403
	9	Contain Box	CHL4402	CHL4401	CHL4404	CHL4403
	10	Screw(M4x3)	CBA1468	CBA1468	CBA1468	CBA1468
	11	Sub Carton	CHA3172	CHA3172	CHA3172	CHA3172
	12	Polyethylene Bag	CEG1173	CEG-162	CEG-162	CEG-162
	13	Protector	CHP2445	CHP2445	CHP2445	CHP2445
	14	Protector	CHP2446	CHP2446	CHP2446	CHP2446
	15	Protector	CHP2385	CHP2385	CHP2385	CHP2385
	16	Protector	CHP2386	CHP2386	CHP2386	CHP2386
*	17	Fastener	CNM6544	CNM6544	Not used	Not used
*	18	Fastener	CNM6545	CNM6545	Not used	Not used
*	19	Polyethylene Bag	E36-615	E36-615	E36-615	E36-615
	20	Screw Assy	CEA2927	CEA2927	CEA2927	CEA2927
	21	Screw	BMZ50P060FMC	BMZ50P060FMC	BMZ50P060FMC	BMZ50P060FMC
*	22	Polyethylene Sheet	CNM4338	CNM4338	CNM4338	CNM4338
	23	Screw	CMZ50P060FMC	CMZ50P060FMC	CMZ50P060FMC	CMZ50P060FMC
	24	Cord	CDE6570	CDE6570	CDE6570	CDE6570
	25	Cord Assy	CDE6376	CDE6376	CDE6376	CDE6376
	26	Remote Control Unit	CXB7969	CXB7969	CXB7969	CXB7969
	27	Speaker Unit	CXB6699	CXB6699	Not used	Not used
	28	Sheet	CNM7244	CNM7244	CNM7244	CNM7244
*	29	Polyethylene Bag	CEG1116	CEG1116	Not used	Not used
	30	Lock Tie	Not used	CNV-754	CNV-754	Not used
*	31	Filter	Not used	CTX1060	CTX1060	Not used
*	32	Polyethylene Bag	Not used	CEG-158	CEG-158	Not used

2.2 EXTERIOR(1/3)



(1) EXTERIOR(1/3) SECTION PARTS LIST

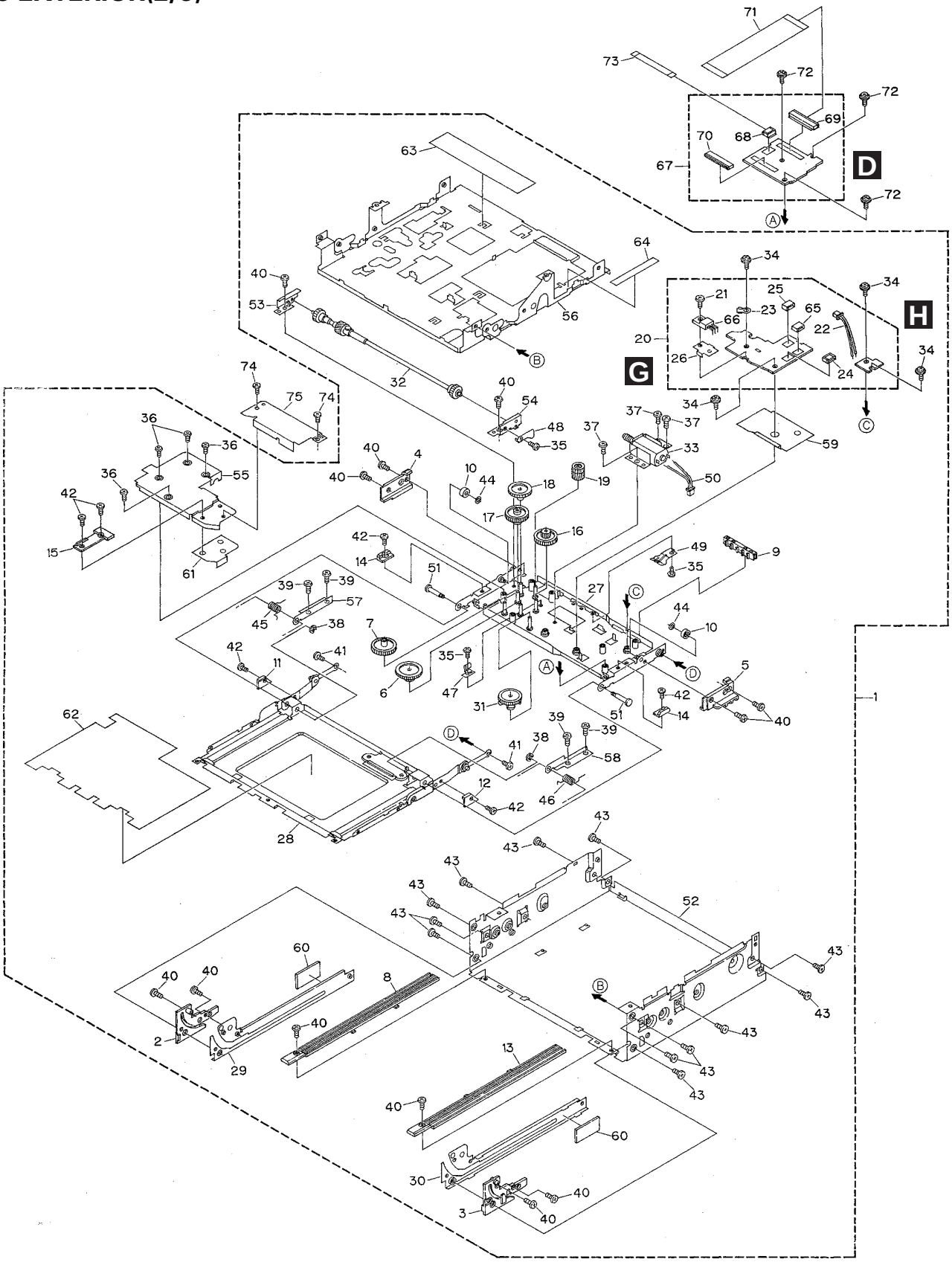
Mark	No.	Description	Part No.
	1	Screw	BMZ20P030FZK
	2	Screw	BMZ20P040FMC
	3	Screw	BMZ26P040FMC
	4	Screw	BSZ26P050FMC
	5	Screw(M1.7x3)	CBA1475
	6	Screw(M2x2)	CBA1487
	7	Resistor	RS1/2P102JL
	8	Transistor(Q20)	2SD2396
	9	Cord Assy	CDE6668
	10	Fuse(5A)	CEK1135
	11	Cap	CNS1472
	12	Screw	CMZ50P060FMC
	13	Case	CNB2702
	14	Bracket	CNC9368
	15	Bracket	CNC9389
	16	Holder	CNC9510
	17	Panel	See Contrast table(2)
	18	Bracket	CNC9698
	19	Insulator	CNM7241
	20	Spring	CBH2479
	21	Sheet	CNM7407
	22	Sheet	CNM7419
	23	Spacer	CNM7465
	24	Spacer	CNM7466
	25	Insulator	CNM7540
	26	PCB	CNP6274
	27	Panel	See Contrast table(2)
	28	Control Unit	See Contrast table(2)
	29	Screw	BMZ26P200FMC
	30	Cord	CDE6568
*	31	Transistor(Q33)	2SD2396
	32	Cord	CDE6569
	33	Grille Unit	See Contrast table(2)
	34	Cord	CDE6574
	35	Cable	CDE6575
	36	Plug(CN401)	CKM1187
	37	Jack(CN202)	See Contrast table(2)
	38	Plug(CN402)	CKS-790
	39	Plug(CN801)	CKS1043
	40	Connector(CN851)	CKS1940
	41	Connector(CN252)	CKS2191
	42	Connector(CN802)	CKS2602
	43	Connector(CN201)	CKS3645
	44	Connector(CN262)	CKS3902
	45	Connector(CN651)	CKS3970
	46	Connector(CN251)	CKS4052
	47	Grille Unit	See Contrast table(2)
	48	Connector(CN101)	CKS4495
	49	Connector(CN261)	CKS4496
	50	Bracket	CNC9371
	51	Holder	CNC9653
	52	Insulator	CNM7531
	53	Heat Sink	CNR1609
	54	Screw	BPZ20P060FMC
	55	Remote Control Unit	CXB7969
	56	Cover	CZN5357
	57	Cover	CNS6559
	58	Button	CAC6992
	59	Button	CAC6993
	60	Button	CAC6997
*	61	Cushion	CNM6270
	62	Cover	CNM7243
	63	Lighting Conductor	CNV6714
	64	Lighting Conductor	CNV6715
	65	Keyboard Unit	See Contrast table(2)
	66	Button	See Contrast table(2)
*	67	Badge	CAH1771
	68	Connector(CN1901)	CKS4511
	69	Spacer	CNM7247
	70	DVD Mechanism Module(MS2)	CXK6115
	71	Button(EJE,PLAY,STOP)	CAC6995
	72	Button(CHP/TR,V.SRC)	CAC6996
	73	Button(RGB)	CAC7003
	74	Button(POWER)	CAC7004
	75	Detach Grille Assy	See Contrast table(2)
	76,77	•••••	
	78	IC(IC1901)	TSOP1840SB1

(2) CONTRAST TABLE

AVX-P7300DVD/UC , AVX-P7300DVD/EW , AVX-P7300DVD/ES/RD and AVX-P7300DVD/ES/RC are constructed the same except for the following:

Mark	No.	Description	Part No.			
			P7300DVD/UC	P7300DVD/EW	P7300DVD/ES/RD	P7300DVD/ES/RC
	17	Panel	CNC9689	CNC9689	CNC9703	CNC9703
	27	Panel	CNS6571	CNS6571	CNS6627	CNS6627
	28	Control Unit	CWM7738	CWM7737	CWM7740	CWM7739
	33	Grille Unit	CXB7279	CXB7279	CXB7278	CXB7278
	37	Jack(CN202)	CKN1027	CKN1027	Not used	Not used
	47	Grille Unit	CXB7284	CXB7284	CXB7285	CXB7285
	65	Keyboard Unit	CWM7744	CWM7745	CWM7744	CWM7744
	66	Button	CAC6994	CAC6994	CAC7011	CAC7011
	75	Detach Grille Assy	CXB7121	CXB7121	CXB7123	CXB7123

2.3 EXTERIOR(2/3)

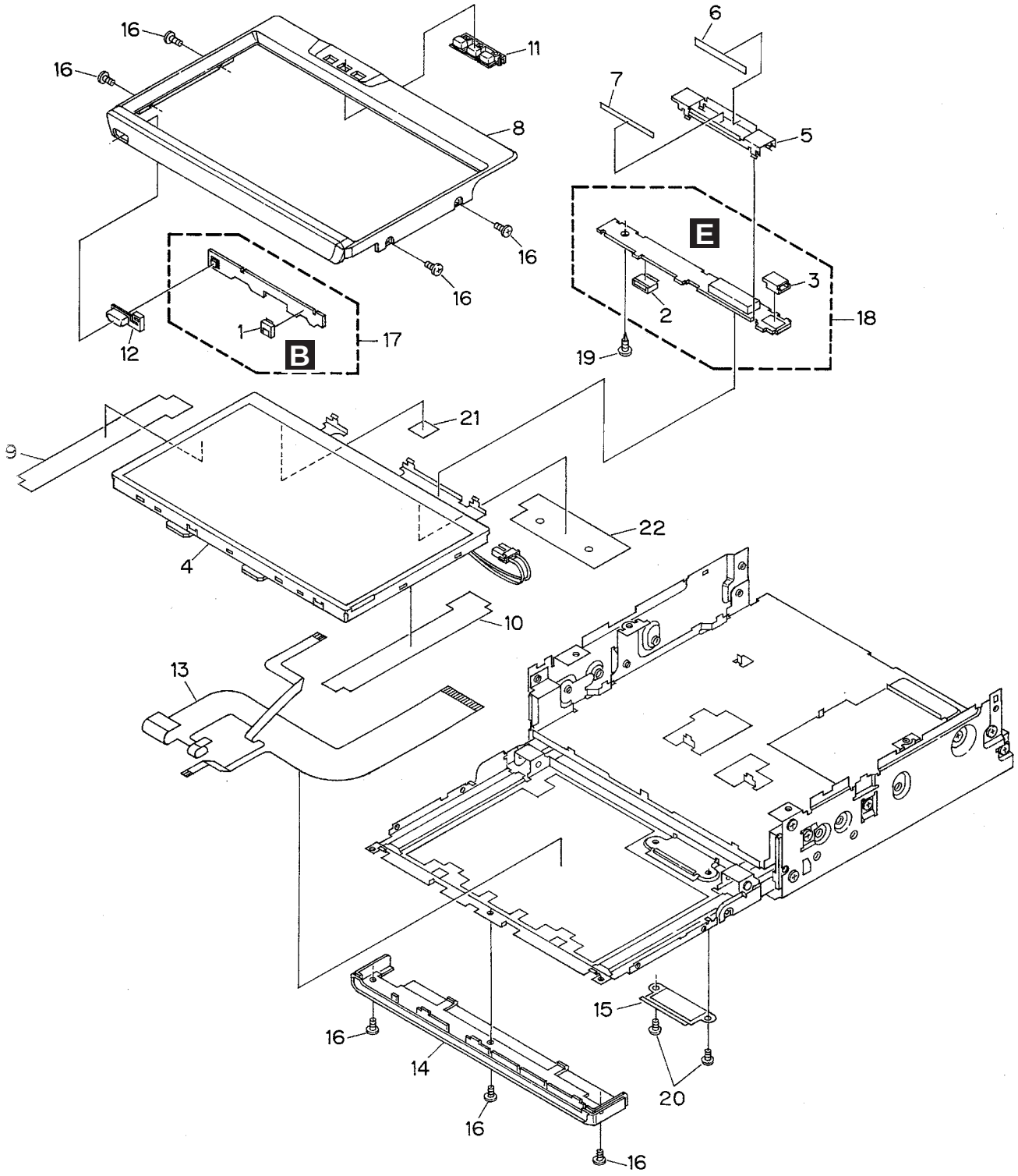


● EXTERIOR(2/3) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Drive Unit	CXB7323
	2	Rail	CNS6492
	3	Rail	CNS6493
	4	Guide	CNS6494
	5	Guide	CNS6495
	6	Gear	CNV6654
	7	Gear	CNV6655
	8	Rack	CNV6669
	9	Guide	CNV6672
	10	Roller	CNV6673
	11	Guide	CNV6750
	12	Guide	CNV6751
	13	Rack	CNV6752
	14	Guide	CNV6765
	15	Guide	CNV6766
	16	Gear	CNV6824
	17	Gear	CNV6825
	18	Gear	CNV6826
	19	Gear	CNV6827
	20	Encoder Unit	CWM7620
	21	Screw	BMZ26P050FMC
	22	Cord Assy	CDE6686
	23	Terminal(CN2801)	CKF1064
	24	Connector(CN2804)	CKS4054
	25	Connector(CN2805)	CKS4282
	26	Heat Sink	CNC9312
	27	Frame Unit	CXB7051
*	28	Case Unit	CXB7052
	29	Rail Unit	CXB7064
	30	Rail Unit	CXB7065
	31	Gear Unit	CXB7437
	32	Shaft Unit	CXB7611
	33	Motor Unit(M1)(Drive Motor)	CXB7612
	34	Screw	IMS20P030FMC
	35	Screw	JFZ20P020FZK
	36	Screw	JFZ20P040FZK
	37	Screw	JGZ20P020FMC
	38	Washer	YE20FUC
	39	Screw(M2x2.2)	CBA1419
	40	Screw(M2x2.5)	CBA1447

Mark	No.	Description	Part No.
	41	Screw(M1.7x3)	CBA1475
	42	Screw(M2x2)	CBA1484
	43	Screw(M3x3)	CBA1534
	44	Washer	CBF1064
	45	Spring	CBH2469
	46	Spring	CBH2470
	47	Spring	CBL1527
	48	Spring	CBL1534
	49	Spring	CBL1545
	50	Cord Assy	CDE6685
	51	Shaft	CLA4007
	52	Chassis	CNA2385
	53	Holder	CNC9302
	54	Holder	CNC9303
	55	Cover	CNC9304
	56	Frame	CNC9455
	57	Holder	CNC9516
	58	Holder	CNC9517
	59	Insulator	CNM7380
	60	Cushion	CNM7377
	61	Insulator	CNM7335
	62	Sheet	CNM7415
	63	Insulator	CNM7490
	64	Insulator	CNM7491
	65	Connector(CN2806)	CKS4282
	66	IC(IC2801)	TA7806S
	67	Relay Unit	CWM7752
	68	Connector(CN1102)	CKS4054
	69	Connector(CN1103)	CKS4495
	70	Connector(CN1101)	CKS4495
	71	PCB	CNP6440
	72	Screw(M2x2.5)	CBA1076
	73	FFC	CDE6555
	74	Screw(UC,EW)	CBA1484
		Screw(ES/RD,ES/RC)	CBA1551
	75	Cover	CNC9467

2.4 EXTERIOR(3/3)



(1) EXTERIOR(3/3) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Connector(CN1301)	CKS4448
	2	Connector(CN2941)	CKS4054
	3	Connector(CN2942)	CKS4428
	4	LCD Module	CWX2565
	5	Holder	CNC9500
	6	Insulator	CNM7351
	7	Insulator	CNM7352
	8	Grille Unit	See Contrast table(2)
	9	Sheet	CNM7592
	10	Sheet	CNM7591
	11	Button(WIDE/ANGLE)	CAC7013
	12	Button(OPEN/CLOSE)	CAC7014
	13	PCB	CNP6272
	14	Cover	See Contrast table(2)
	15	Holder	CNC9535
	16	Screw	See Contrast table(2)
	17	Control Unit	See Contrast table(2)
	18	Keyboard Unit	See Contrast table(2)
	19	Screw	BPZ20P060FMC
	20	Screw	JFZ20P022FNI
	21	Sheet	CNM7593
	22	Sheet	CNM7594

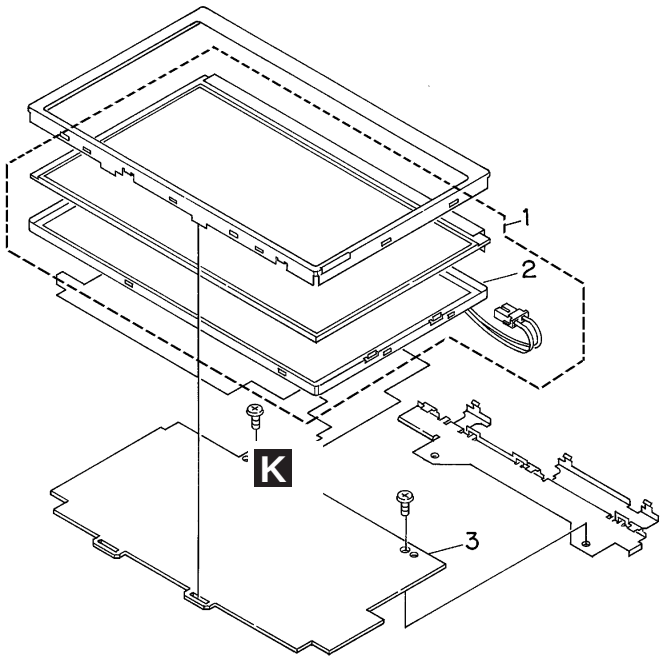
● Please stop the reuse of this sheet when you peel off sheet(9,10,21,22).

(2) CONTRAST TABLE

AVX-P7300DVD/UC , AVX-P7300DVD/EW , AVX-P7300DVD/ES/RD and AVX-P7300DVD/ES/RC are constructed the same except for the following:

Mark	No.	Description	Part No.			
			P7300DVD/UC	P7300DVD/EW	P7300DVD/ES/RD	P7300DVD/ES/RC
	8	Grille Unit	CXB7535	CXB7535	CXB7536	CXB7536
	14	Cover	CNS6628	CNS6628	CNS6564	CNS6564
	16	Screw	CBA1484	CBA1484	CBA1551	CBA1551
	17	Control Unit	CWM7738	CWM7737	CWM7740	CWM7739
	18	Keyboard Unit	CWM7744	CWM7745	CWM7744	CWM7744

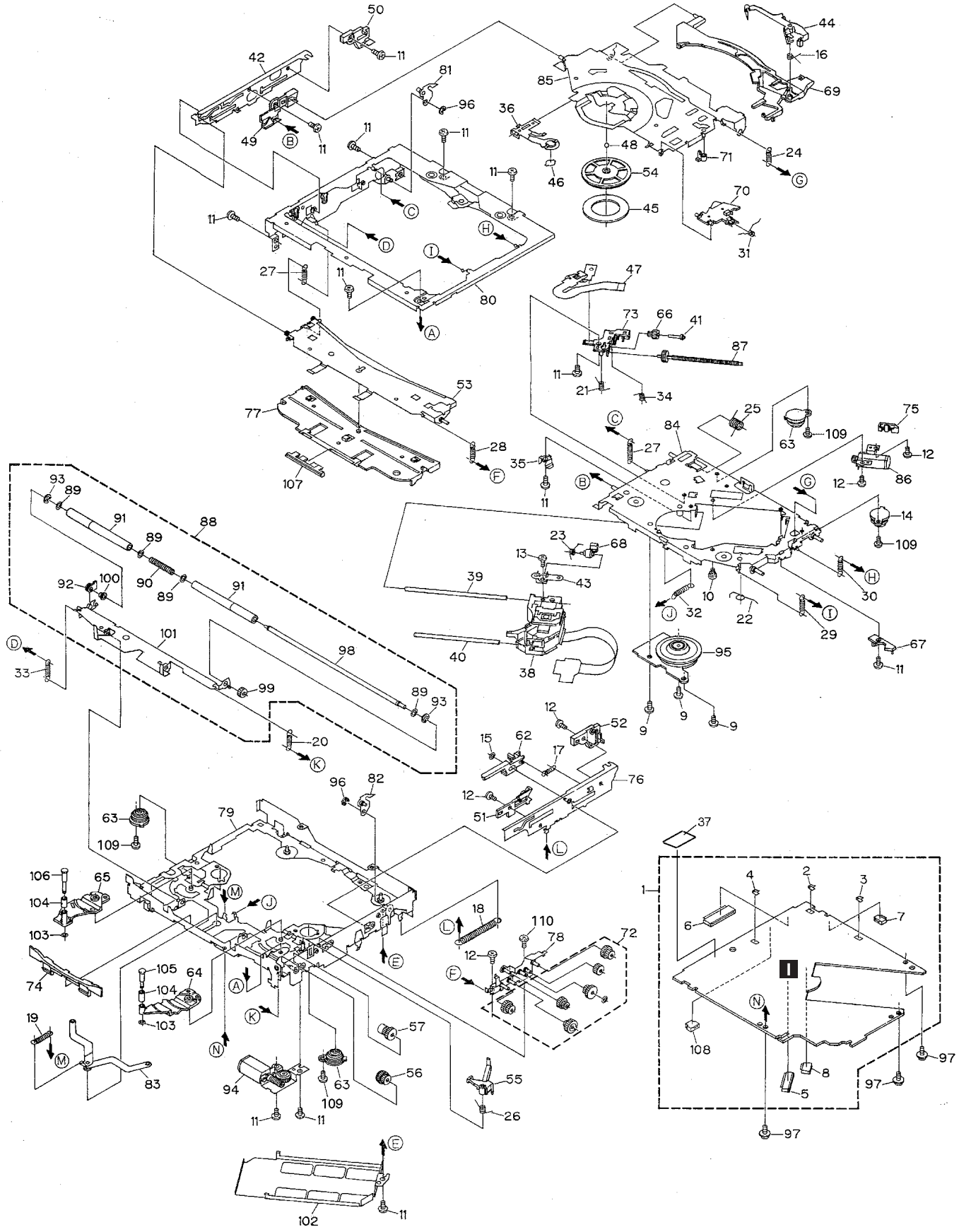
2.5 LCD MODULE



● LCD MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	LCD Module	TFD70W80
	2	Back Light Unit	NML75-9252-P
	3	Video Schematic	NMP70-9253-P

2.6 DVD MECHANISM MODULE

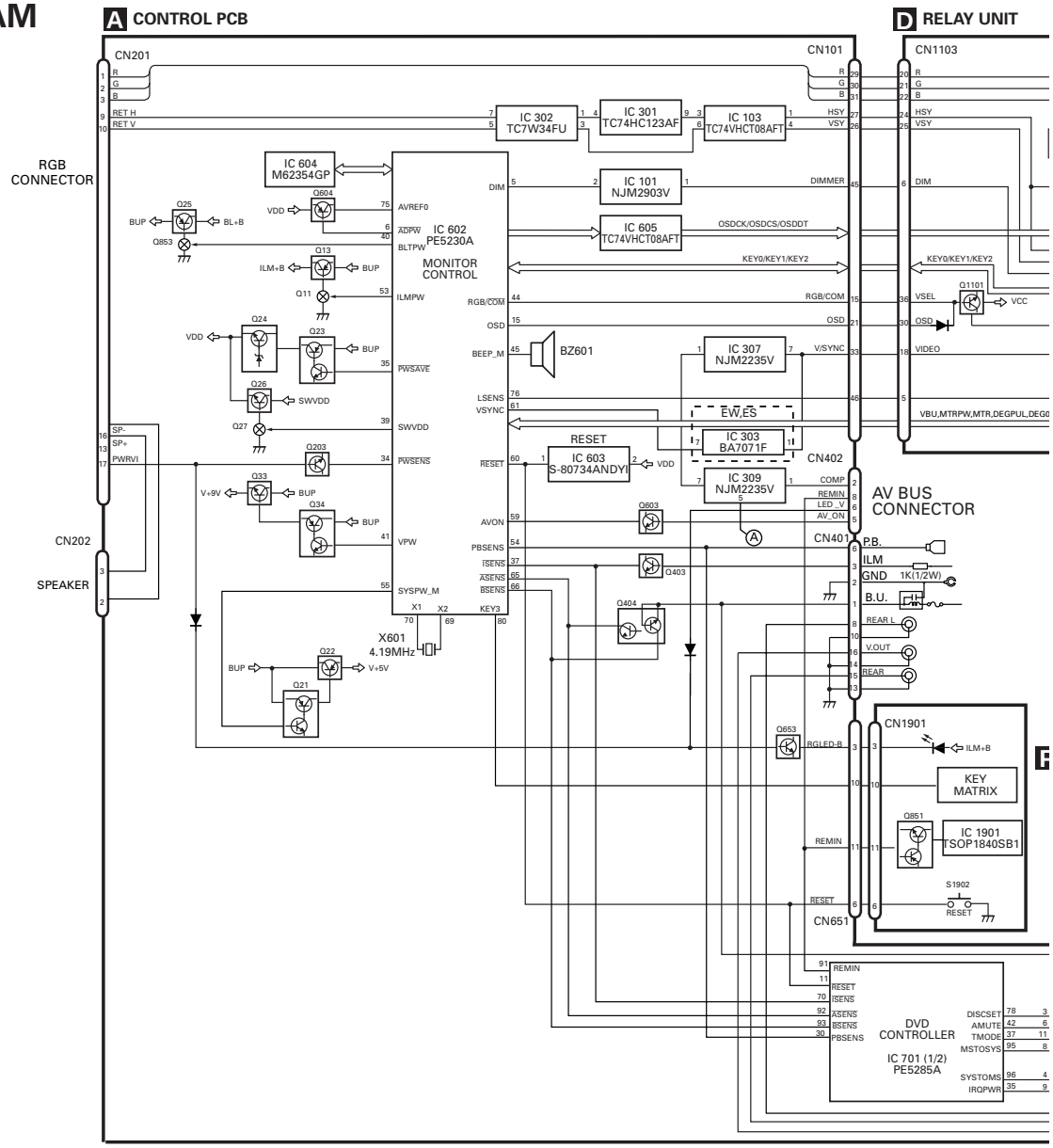


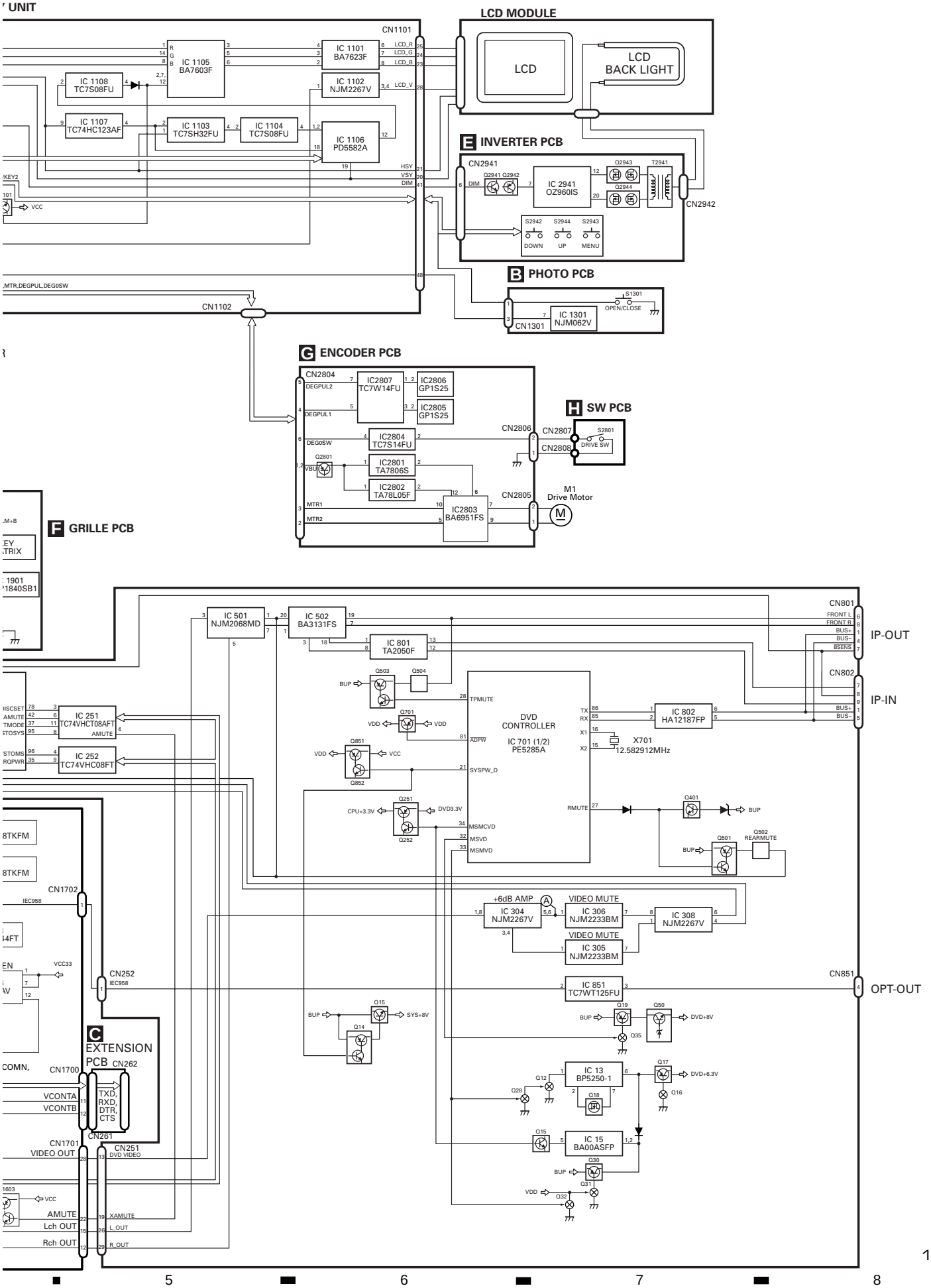
● DVD MECHANISM MODULE SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	DVD core unit V	CWX2574
	2	Terminal(CN1703)	CKF1065
	3	Terminal(CN1705)	CKF1065
	4	Terminal(CN1706)	CKF1065
	5	Connector(CN1100)	CKS3749
	6	Connector(CN1701)	CKS4052
	7	Connector(CN1700)	CKS4374
	8	Connector(CN1300)	CKS4507
	9	Screw(M2x3)	CBA1486
	10	Screw	CBA1535
	11	Screw(M2x2.2)	CBA1547
	12	Screw(M2x2.2)	CBA1548
	13	Screw(M1.4x2)	CBA1549
	14	Damper	CNV6927
	15	Washer	CBF1038
	16	Spring	CBH2394
	17	Spring	CBH2395
	18	Spring	CBH2396
	19	Spring	CBH2397
	20	Spring	CBH2398
	21	Spring	CBH2399
	22	Spring	CBH2400
	23	Spring	CBH2401
	24	Spring	CBH2402
	25	Spring	CBH2403
	26	Spring	CBH2404
	27	Spring	CBH2405
	28	Spring	CBH2406
	29	Spring	CBH2407
	30	Spring	CBH2408
	31	Spring	CBH2410
	32	Spring	CBH2411
	33	Spring	CBH2413
	34	Spring	CBH2414
	35	Spring	CBL1499
	36	Spring	CBL1500
	37	Sheet	CNM7590
	38	Pickup Unit(Service)(DP4)	CXX1530
	39	Shaft	CLA3878
	40	Shaft	CLA3879
	41	Shaft	CLA3881
	42	Lever	CNC8988
	43	Bracket	CNC8992
	44	Arm	CNC8994
	45	Sheet	CNM6883
	46	Sheet	CNM6884
	47	PCB	CNP5971
	48	Ball	CNR1189
	49	Guide	CNV6352
	50	Guide	CNV6353
	51	Guide	CNV6354
	52	Guide	CNV6355
	53	Guide	CNV6356
	54	Clamper	CNV6357
	55	Arm	CNV6358
	56	Gear	CNV6361
	57	Gear	CNV6362
	58-61	•••••	
	62	Rack	CNV6367
	63	Damper	CNV6368
	64	Arm	CNV6369
	65	Arm	CNV6370
	66	Gear	CNV6372
	67	Holder	CNV6374
	68	Rack	CNV6376
	69	Arm	CNV6377
	70	Arm	CNV6378
	71	Arm	CNV6379
	72	Gear Unit	CXB5959
	73	Holder	CNV6383
	74	Guide	CNV6384
	75	Holder	CNV6385
	76	Lever Unit	CXB5943
	77	Holder Unit	CXB5944
*	78	Holder Unit	CXB5947
	79	Frame Unit	CXB5948
	80	Frame Unit	CXB5949
	81	Arm Unit	CXB5950
	82	Arm Unit	CXB5951
	83	Arm Unit	CXB5952
	84	Chassis Unit	CXB5953
	85	Arm Unit	CXB5954
	86	Motor Unit(CRG)	CXB5955
	87	Screw Unit	CXB5957
	88	Roller Unit	CXB5958
	89	Washer	CBF1060
	90	Spring	CBH2170
	91	Roller	CNV6068
	92	Holder	CNV6210
	93	Washer	YE20FUC
	94	Motor Unit(LOAD)	CXB5960
	95	Motor Unit(SPDL)	CXB6218
	96	Washer	YE15FUC
	97	Screw	IMS20P030FMC
*	98	Shaft	CLA3877
*	99	Gear	CNV6359
*	100	Caller	CNV6382
*	101	Arm Unit	CXB5945
	102	Cover	CNC9532
	103	Washer	CBF1087
	104	Roller	CNV6928
	105	Shaft	CLA4091
	106	Shaft	CLA4092
	107	Guide	CNV6805
	108	Connector(CN1702)	CKS4282
	109	Screw (M2x3.5)	CBA1560
	110	Screw (M2x2.2)	CBA1419

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

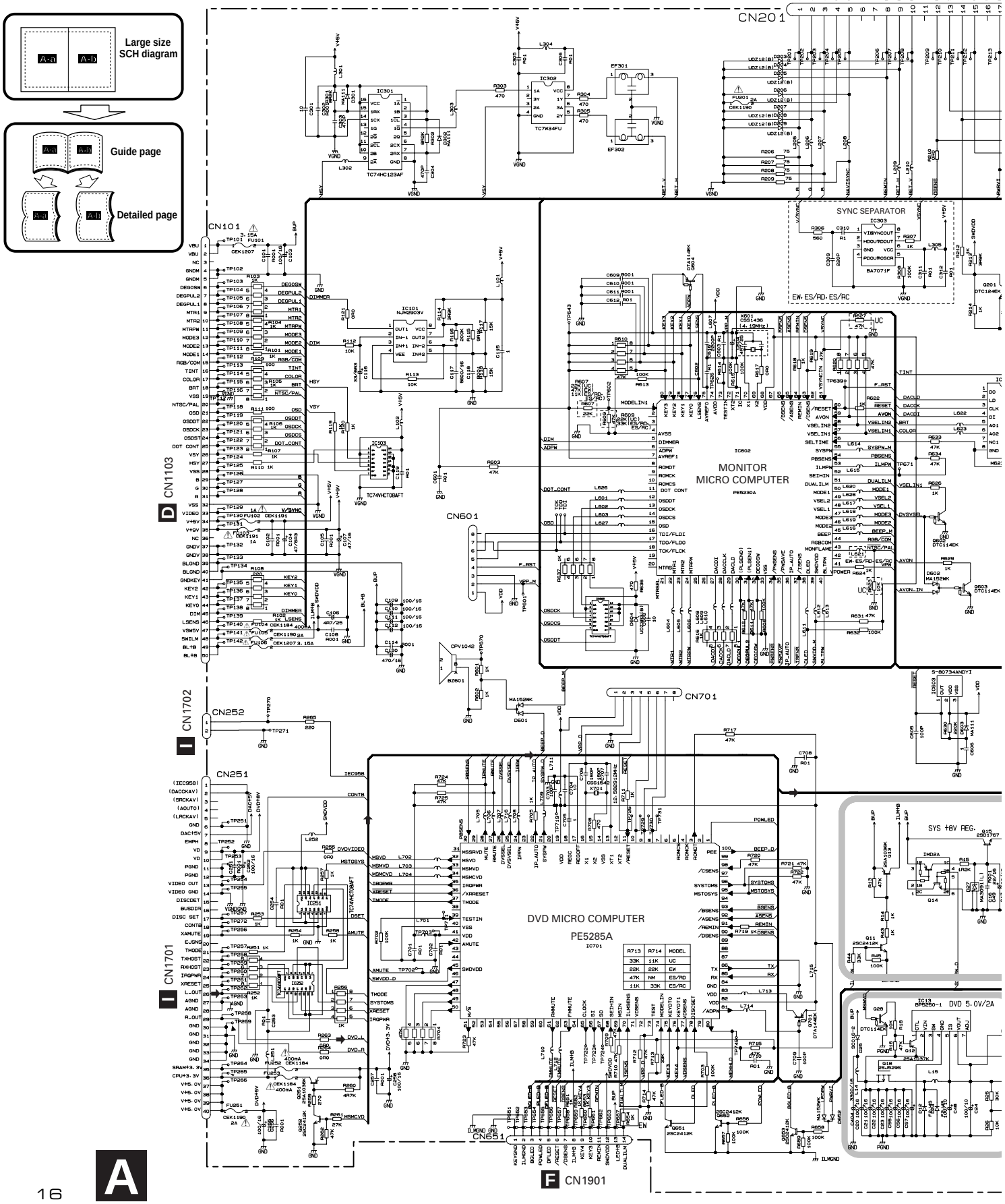



UNIT
LCD MODULE
LCD
LCD BACK LIGHT
CN1101
IC 1101 BA7623F
IC 1102 NJM2267V
IC 1103 TC7SH32FU
IC 1104 TC7S08FU
IC 1105 BA7603F
IC 1106 PD5582A
IC 1107 TC74HC123AF
IC 1108 TC7S08FU
LCD_R
LCD_G
LCD_B
LCD_V
HSY
VSY
DIM
E INVERTER PCB
CN2941
IC 2941 OZ960IS
Q2941 Q2942
Q2943
Q2944
T2941
CN2942
S2942 DOWN
S2944 UP
S2943 MENU
B PHOTO PCB
S1301 OPEN/CLOSE
IC 1301 NJM062V
CN1301
CN1102
G ENCODER PCB
CN2804
IC2807 TC7W14FU
IC2806 GP1S25
IC2805 GP1S25
IC2804 TC7S14FU
IC2801 TA7806S
IC2802 TA78L05F
IC2803 BA6951FS
DEGPUL2
DEGPUL1
DEG0SW
MTR1
MTR2
H SW PCB
CN2806
CN2807
CN2808
S2801 DRIVE SW
M1 Drive Motor
F GRILLE PCB
IC 501 NJM2068MD
IC 502 BA3131FS
IC 801 TA2050F
IC 251 TC74VHCT08AFT
IC 252 TC74VHC08FT
AMUTE
TMODE
STOSYS
STOMS
RQPWR
DISCSET
CN801
FRONT L
FRONT R
BUS+
BUS-
BSENS
IP-OUT
CN802
IP-IN
Q503
Q504
Q701
Q851
Q852
Q251
Q252
BUP
VDD
VCC
CPU+3.3V
DVD3.3V
TPMUTE
ADPW
SYSPW_D
MSMCVD
MSVD
MSMVD
DVD CONTROLLER
IC 701 (1/2)
PE5285A
TX
RX
X1
X2
X701
12.582912MHz
IC 802 HA12187FP
RMUTE
Q401
Q501
Q502 REARMUTE
CN1702
IEC958
CN252
VCC33
+6dB AMP
IC 304 NJM2267V
VIDEO MUTE
IC 306 NJM2233BM
IC 308 NJM2267V
IC 305 NJM2233BM
CN851
OPT-OUT
IC 851 TC7WT125FU
Q15
Q14
SYS+8V
Q19
Q50
Q35
DVD+8V
C EXTENSION PCB
CN1700
CN262
CN261
CN1701 VIDEO OUT
CN251 DVD VIDEO
VCONTA
VCONTB
TXD,
RXD,
DTR,
CTS
IC 13 BP5250-1
Q12
Q28
Q18
Q17
Q16
DVD+6.3V
IC 15 BA00ASFP
Q30
Q31
Q32
AMUTE
Lch OUT
Rch OUT
XAMUTE
L_OUT
R_OUT

A-a

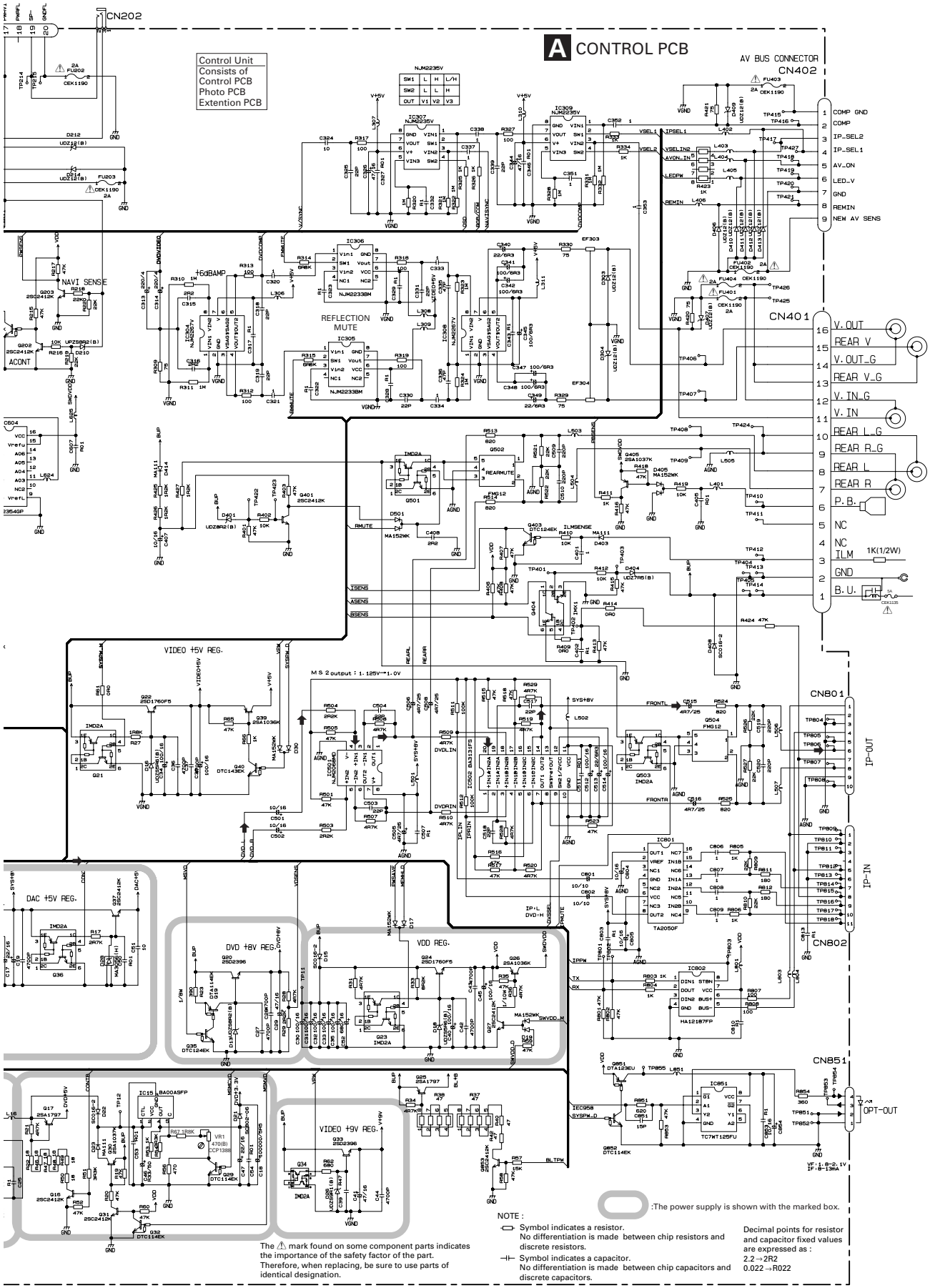
3.2 CONTROL PCB(GUIDE PAGE)

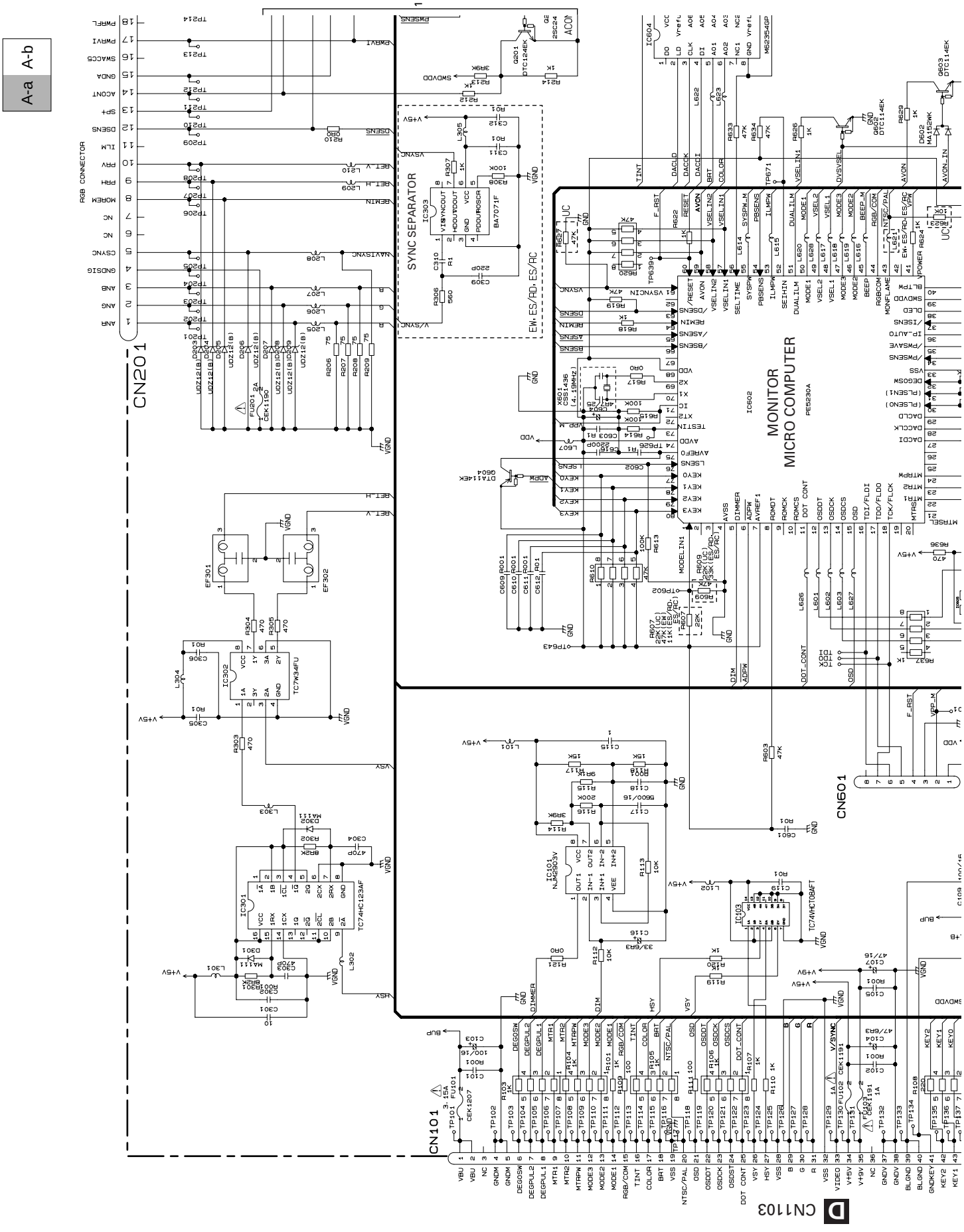
Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A

A-b


A CONTROL PCB
Control Unit
Consists of
Control PCB
Photo PCB
Extention PCB
CN202
AV BUS CONNECTOR
CN402
CN401
CN801
CN802
CN851
IP-OUT
IP-IN
OPT-OUT
COMP GND
COMP
IP_SEL2
IP_SEL1
AV_ON
LED_V
GND
REMIN
NEW AV SENS
V.OUT
REAR V
V.OUT_G
REAR V_G
V.IN_G
V.IN
REAR L_G
REAR R_G
REAR L
REAR R
P.B.
NC
NC
ILM
GND
B.U.
1K(1/2W)
NAVI SENSE
ACONT
+6dBAMP
REFLECTION MUTE
VIDEO +5V REG.
DAC +5V REG.
DVD +8V REG.
VDD REG.
VIDEO +9V REG.
MS 2 output : 1.125V→1.0V
:The power supply is shown with the marked box.
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.


A-b
A-a
CN201
CN601
CN101
CN1103
SYNC SEPARATOR
EW, ES/RD, ES/RC
MONITOR
MICRO COMPUTER
IC602
PE5230A
IC303
BA7071F
IC302
TC7W34FU
IC301
TC74HC123AF
IC101
NJM2903V
IC103
TC74VHCT08AFT
IC604
M62354GP
RGB CONNECTOR
VBU
NC
GNDM
DEGOSW
DEGPUL2
DEGPUL1
MTR1
MTR2
MTRPW
MODE3
MODE2
MODE1
RGB/COM
TINT
COLOR
BRT
VSS
NTSC/PAL
OSD
OSDOT
OSDCK
OSDST
DOT CONT
VSY
HSY
VSS
B
G
R
VSS
VIDEO
V+5V
V+9V
NC
GNDV
BLGND
GNDKEY
KEY2
KEY1
V+5V
VGND
VSY
HSY
DIM
BUP
SWDVDD
F_RST
VPP_M
TINT
DACLD
DACCK
DACDI
BRT
COLOR
AVON
VSELIN2
VSELIN1
SYSPW_M
PBSENS
ILMPW
DUALILM
MODE1
VSEL2
VSEL1
MODE3
MODE2
BEEP_M
RGB/COM
NTSC/PAL
EW, ES/RD, ES/RC
POWER
VSYNCIN
HSYNCIN
/RESET
/DSENS
REMIN
/BSENS
/ASENS
VDD
X1
X2
TESTIN
AVDD
AVREF0
LSENS
KEY0
KEY1
KEY2
KEY3
AVSS
DIMMER
ADPW
AVREF1
ROMDT
ROMCK
ROMCS
DOT CONT
OSDDT
OSDCK
OSDCS
OSD
TDI/FLDI
TDO/FLDO
TCK/FLCK
MTRSEL
MTR2
MTR1
MTRPW
DACDI
DACCLK
DACLD
PLSEN0
PLSEN1
DEGOSW
VSS
/PWSENS
/PWSAVE
IP-AUTO
/ISENS
DLED
SWDVDD
BLTPW
SELTIME
SETHIN
MODE4
MONFLAME
BEEP
RGBCOM
I-/NTSC/PAL
EW, ES/RD, ES/RC
VSELIN1
DVSVSEL
AVON_IN
F_RST
VPP_M
VDD
VGND
V+5V
V+9V
MODELIN1
TP602
TP643
TP626
TP639
TP671
X601 (4.19MHz)
EF301
EF302
L304
L303
L302
L301
L101
L102
L305
L626
L627
L621
L622
L623
L624
L625
L614
L615
L616
L617
L618
L619
L620
L628
L601
L602
L603
L604
L605
L606
L607
L608
L609
L610
L611
L612
L613
D602
D603
D604
D605
D606
D607
D608
D609
D610
D611
D612
D613
D614
D615
D616
D617
D618
D619
D620
D621
D622
D623
D624
D625
D626
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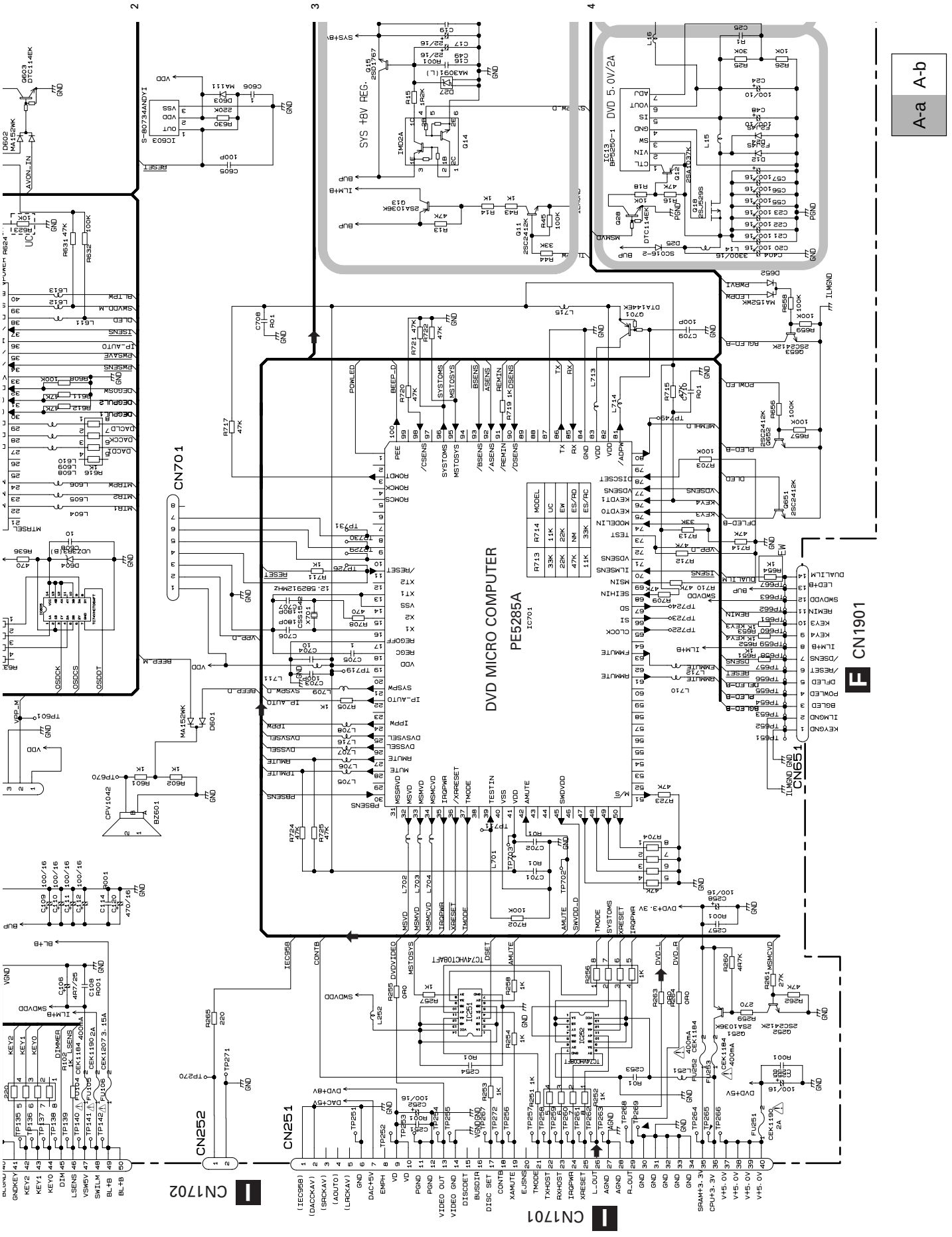
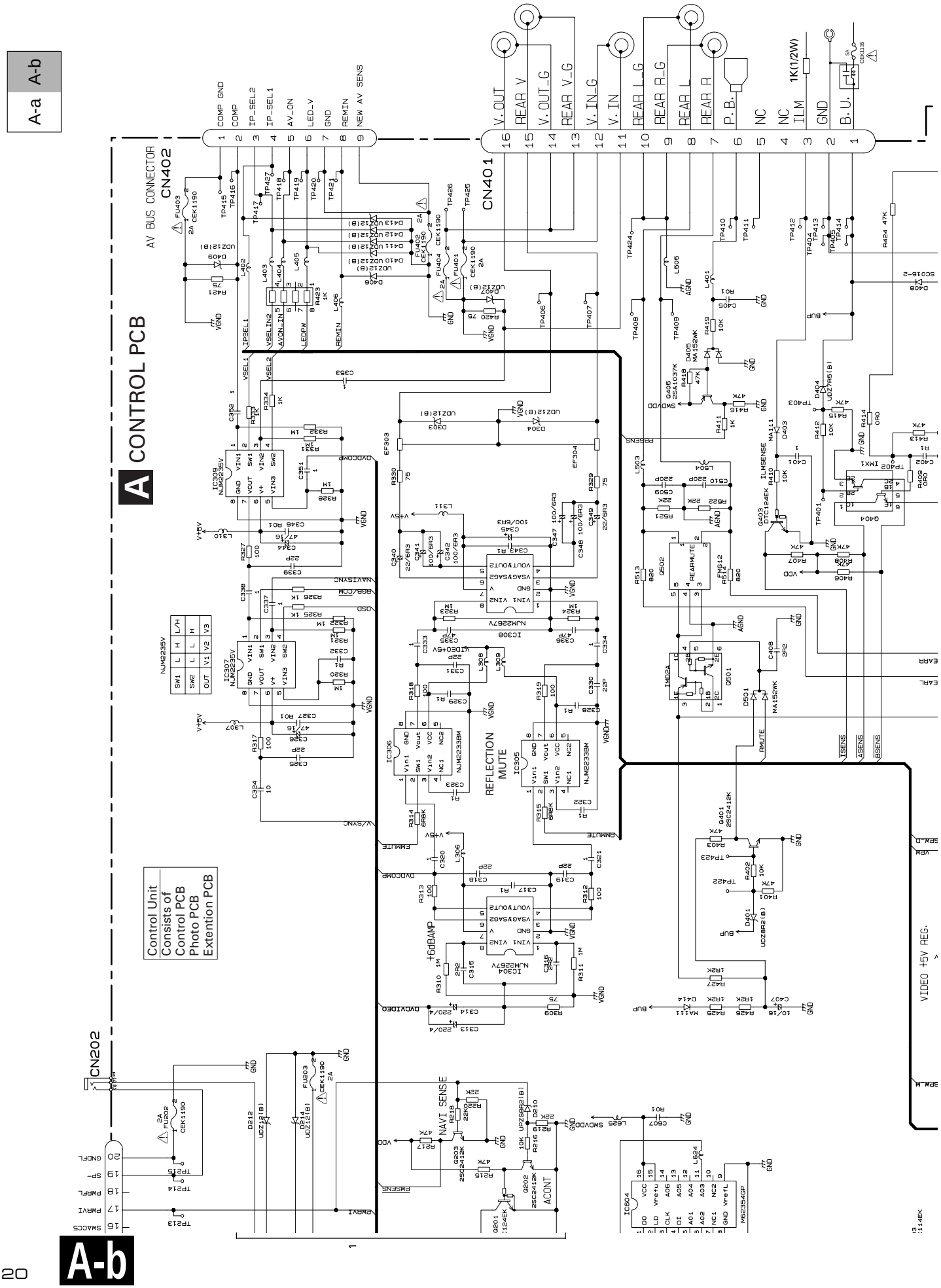
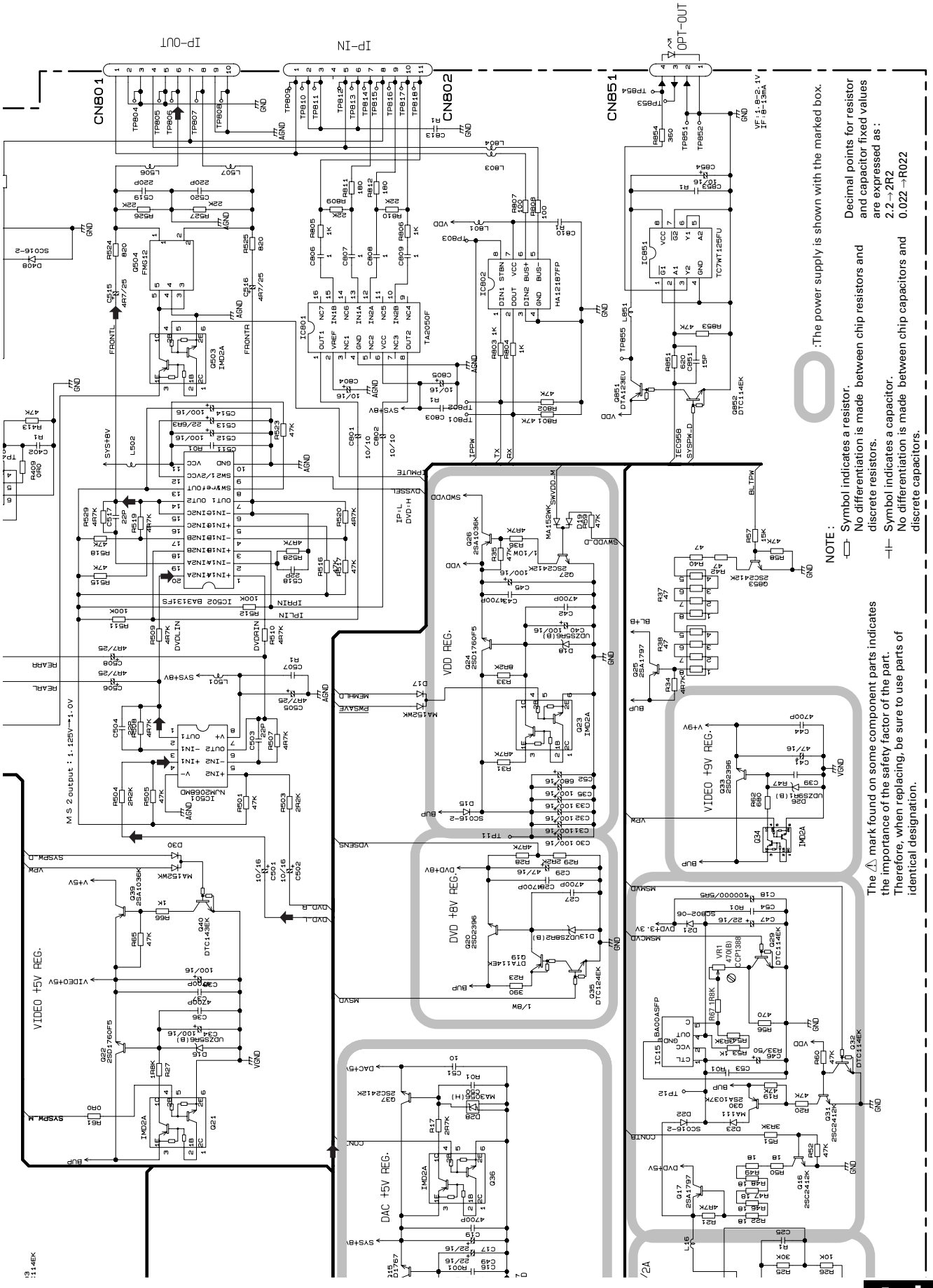
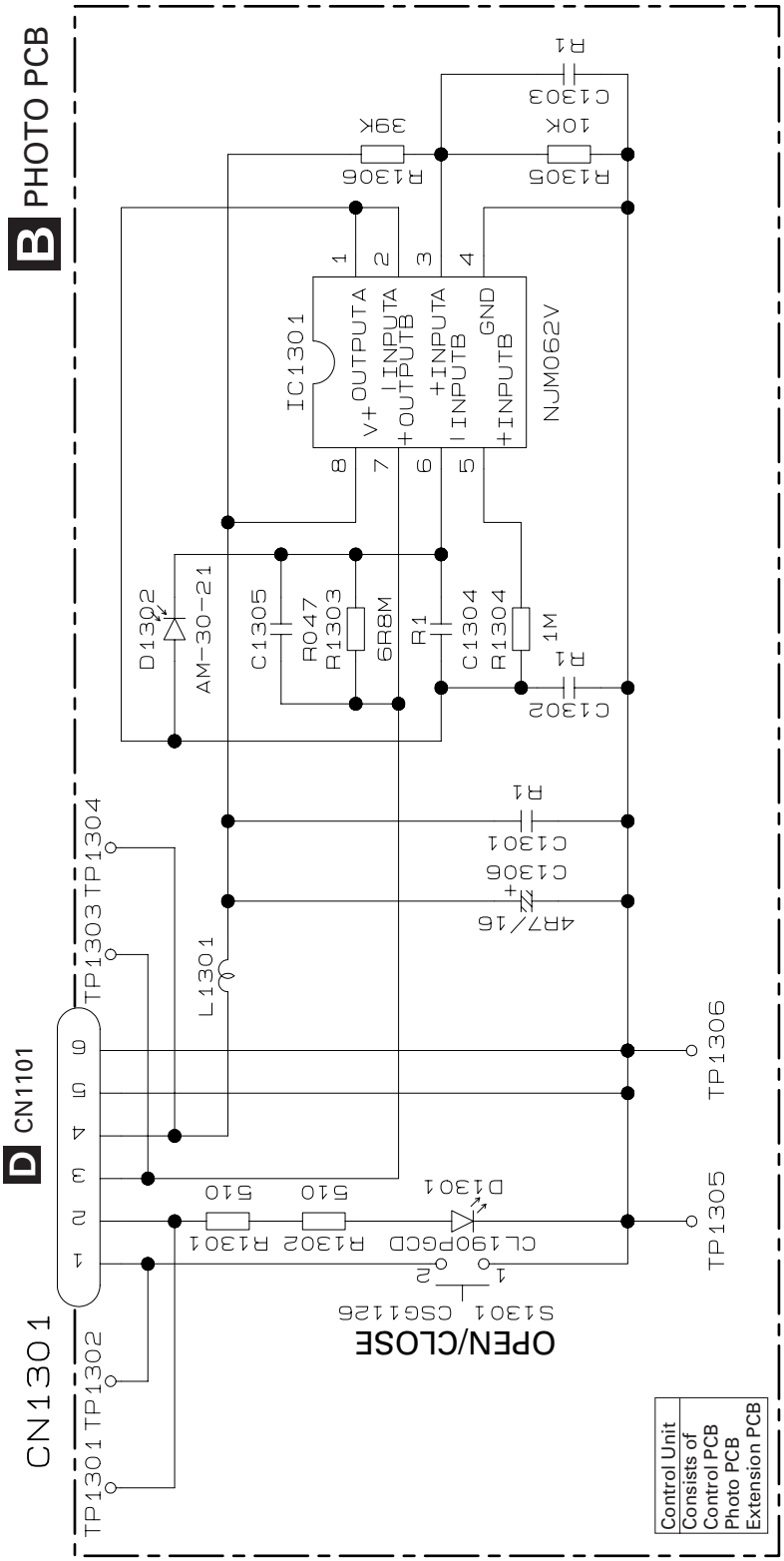
D635
D636
D637
D638
D639
D640
D641


DVD MICRO COMPUTER
PE5285A
IC701
SYS +8V REG.
DVD 5.0V/2A
CN701
CN1901
CN651
CN251
CN252
CN1701
CN1702
A-a
A-b

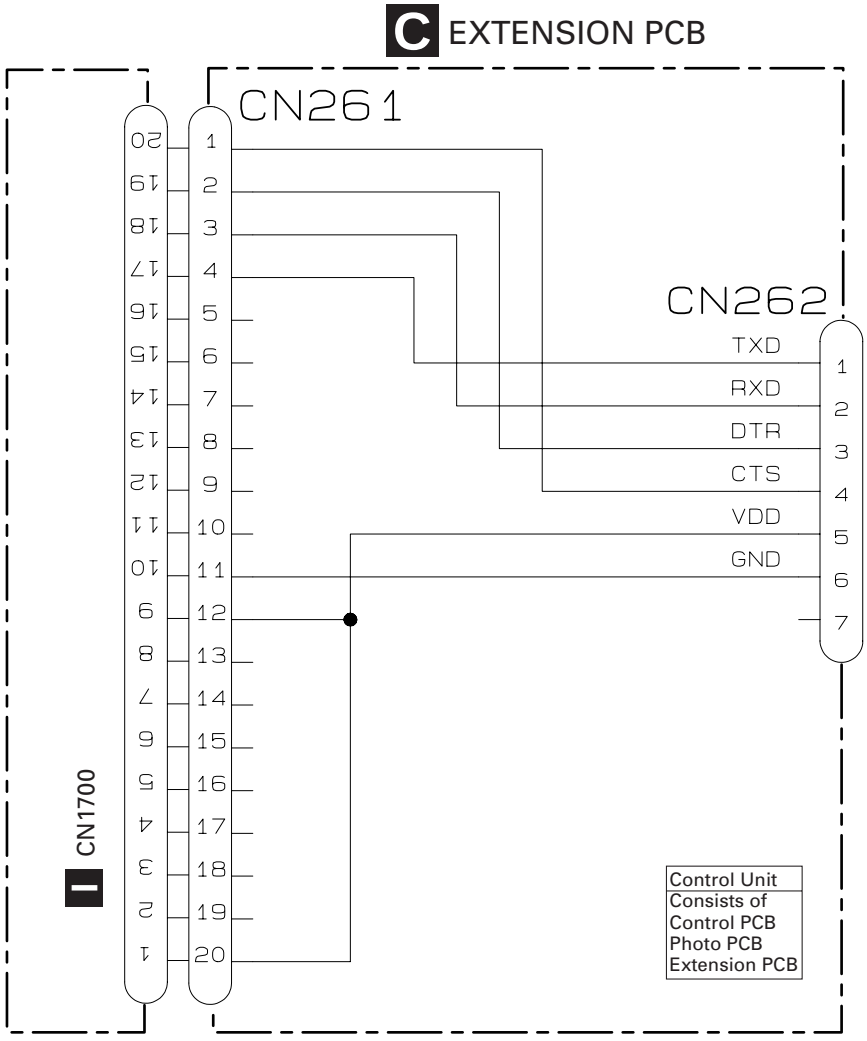

A-a A-b
A CONTROL PCB
AV BUS CONNECTOR
CN402
CN401
CN202
COMP GND
COMP
IP_SEL2
IP_SEL1
AV_ON
LED_V
GND
REMIN
NEW AV SENS
V.OUT
REAR V
V.OUT_G
REAR V_G
V.IN_G
V.IN
REAR L_G
REAR R_G
REAR L
REAR R
P.B.
NC
NC
1K(1/2W)
ILM
GND
B.U.
Control Unit
Consists of
Control PCB
Photo PCB
Extention PCB
REFLECTION
MUTE
+6dBAMP
NAVI SENSE
ACONT
VIDEO +5V REG.
A-b


CN801
CN802
CN851
IP-OUT
IP-IN
OPT-OUT
VF:1.8~2.1V
IF:8~13mA
NOTE :
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as :
2.2→2R2
0.022→R022
:The power supply is shown with the marked box.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
VDD REG.
VIDEO +9V REG.
DVD +8V REG.
VIDEO +5V REG.
DAC +5V REG.
M S 2 output : 1.125V→1.0V
IC502 BA3131FS
NJM2068MD
IC501
IC801
TA2050F
IC802
HA12187FP
IC851
TC7WT125FU

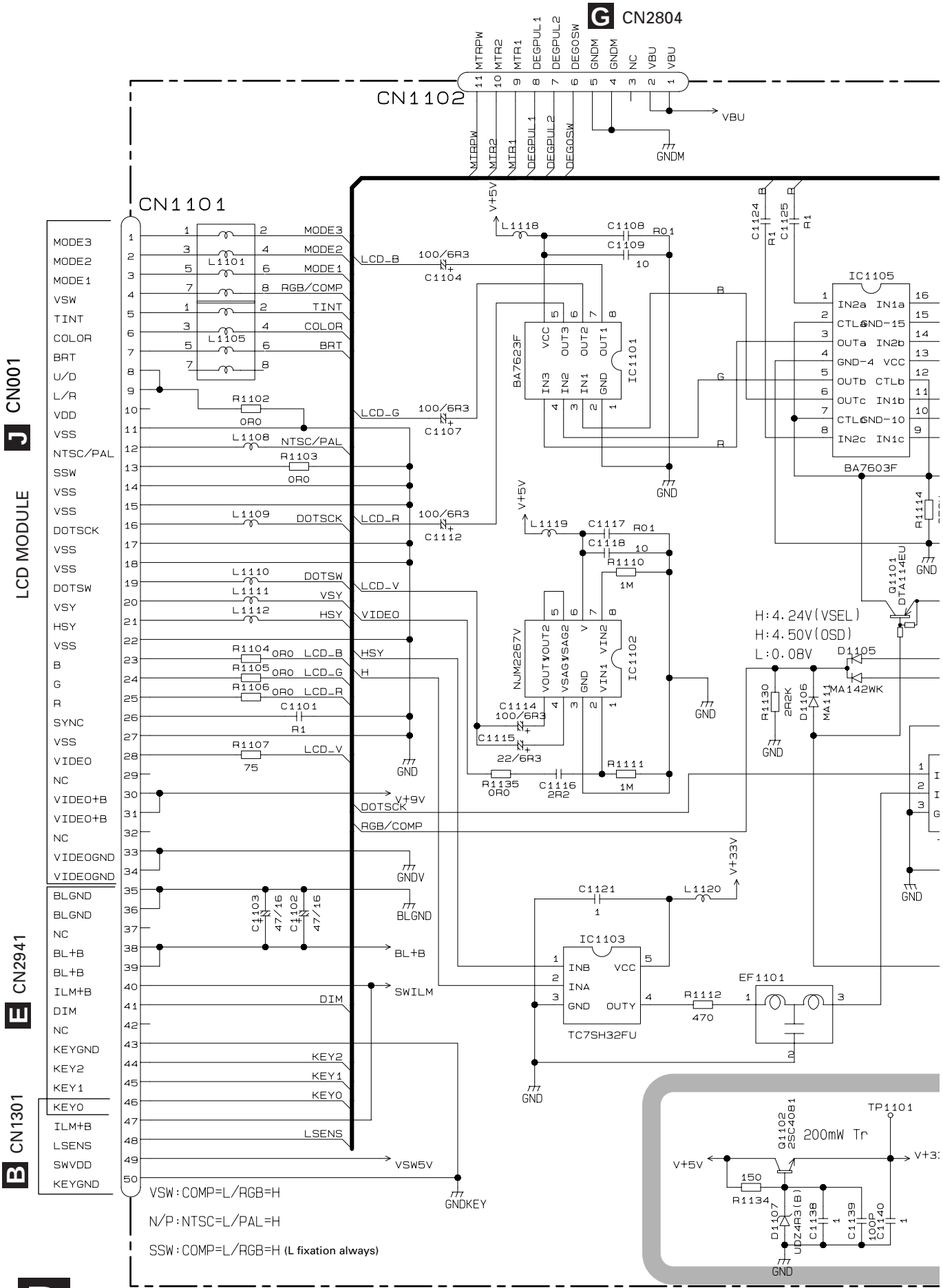
3.3 PHOTO PCB

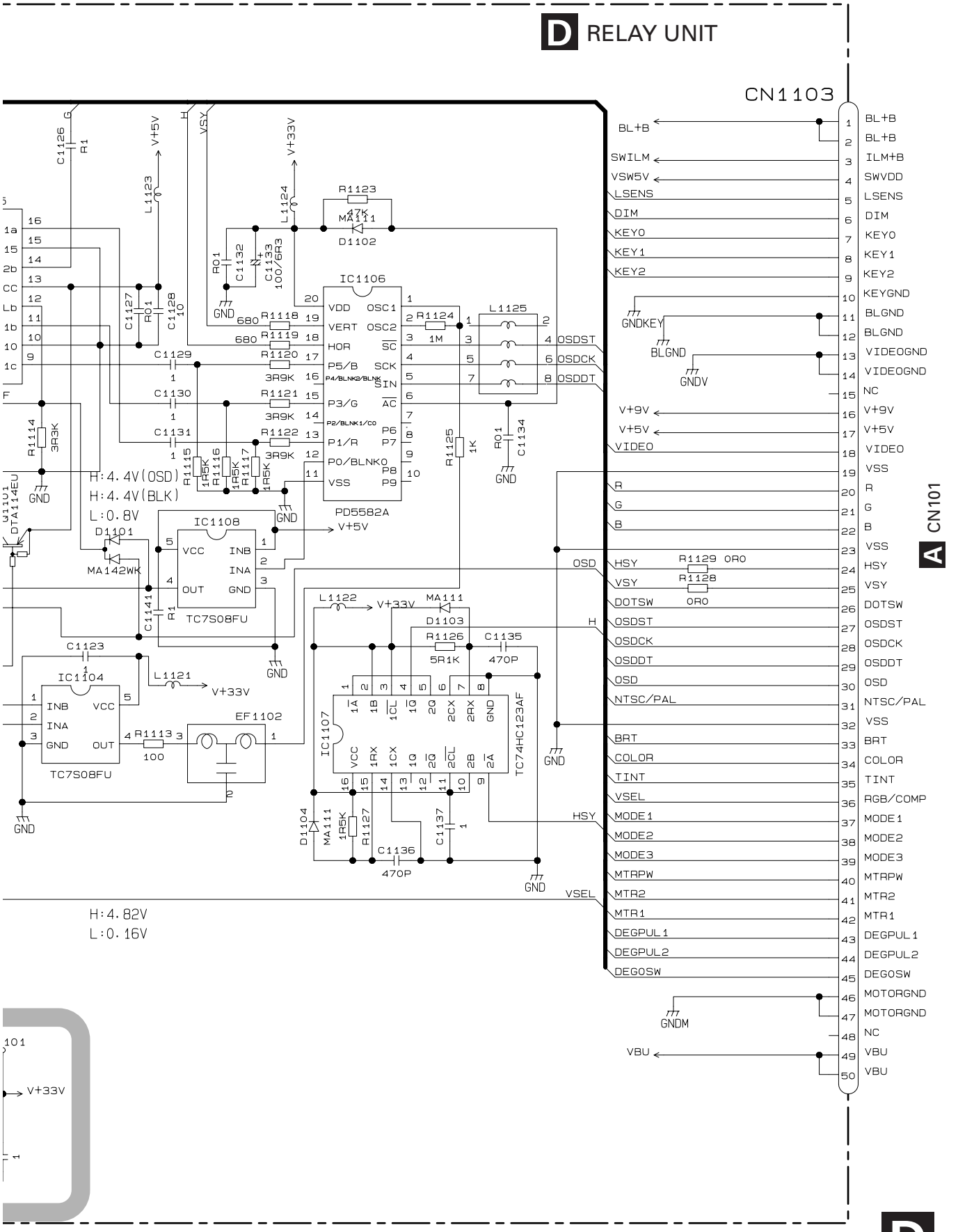

B PHOTO PCB
D CN1101
CN1301
TP1301 TP1302 TP1303 TP1304
L1301
C1306
4R7/16
C1301
R1
C1302
R1304
1M
C1304
R1
6R8M
R1303
R047
C1305
D1302
AM-30-21
IC1301
NJM062V
V+ OUTPUTA
-INPUTA
+OUTPUTB
+INPUTA
-INPUTB
GND
+INPUTB
R1305
10K
R1306
39K
C1303
R1
TP1305
TP1306
D1301
R1301
510
R1302
510
CL190PGCD
S1301 CSG1126
OPEN/CLOSE
Control Unit
Consists of
Control PCB
Photo PCB
Extension PCB

3.4 EXTENSION PCB

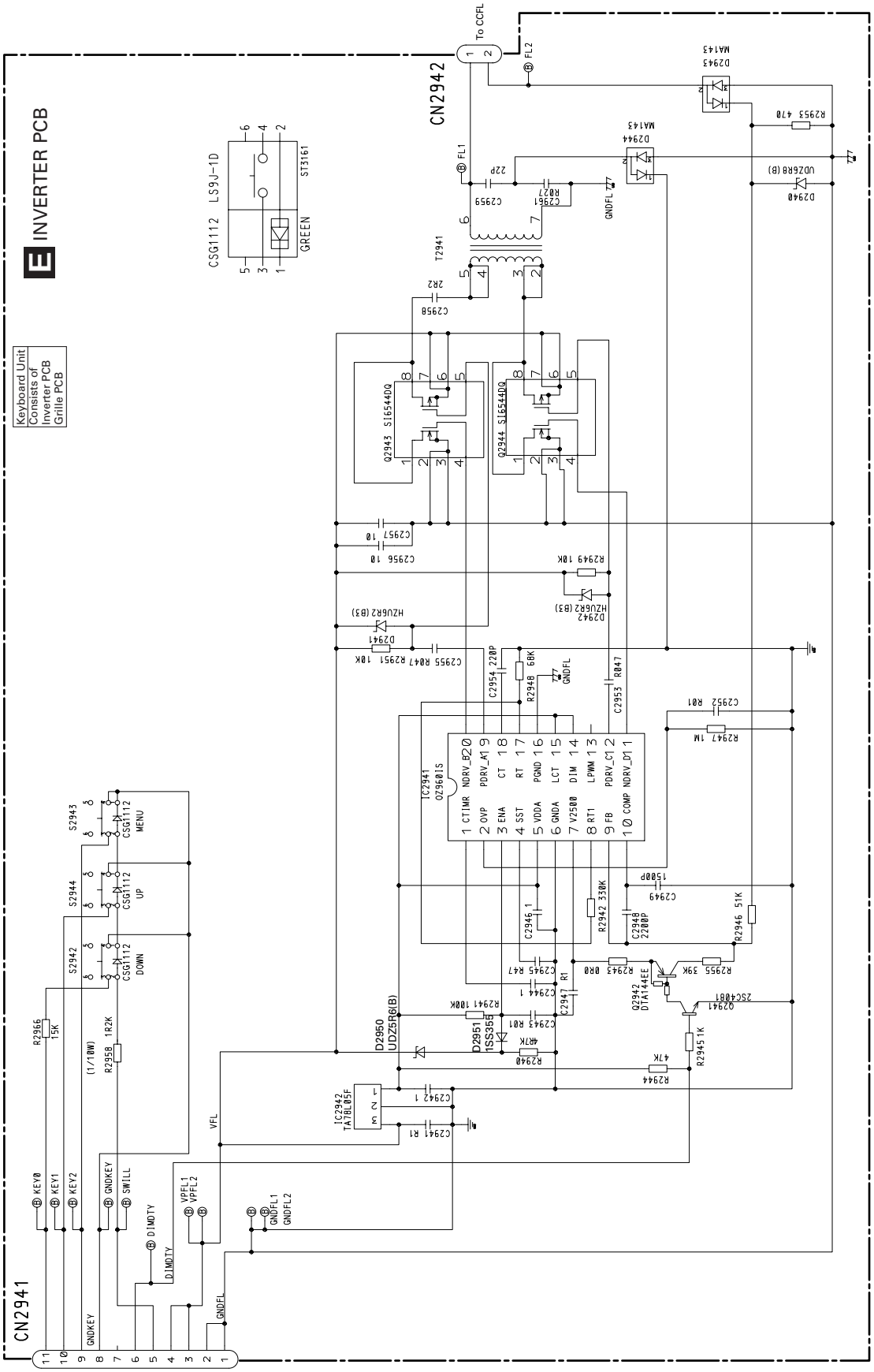


3.5 RELAY UNIT

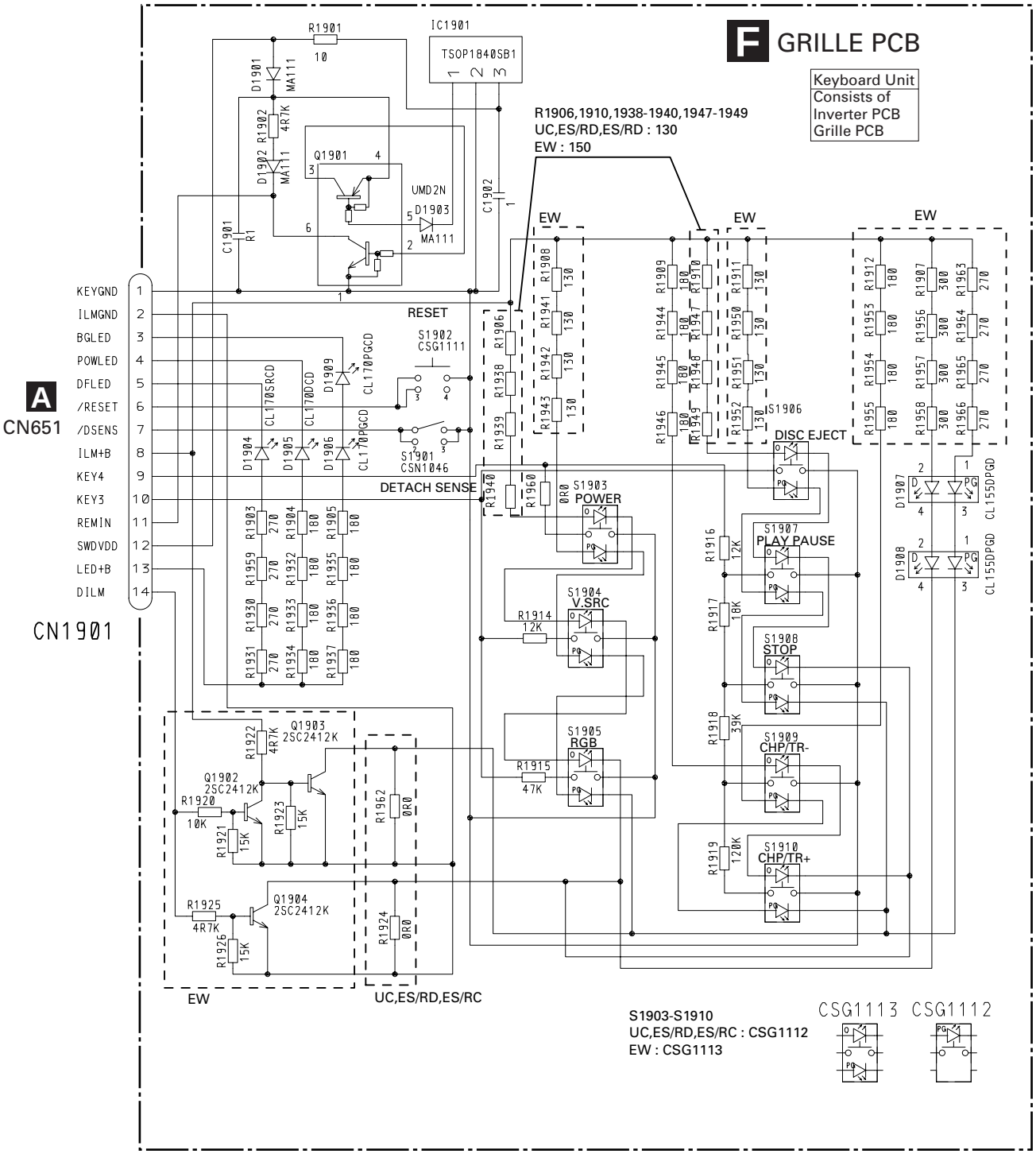



D RELAY UNIT
CN1103
CN101
IC1106
PD5582A
IC1108
TC7S08FU
IC1104
TC7S08FU
IC1107
TC74HC123AF
H:4.4V(OSD)
H:4.4V(BLK)
L:0.8V
H:4.82V
L:0.16V
BL+B
SWILM
VSW5V
LSENS
DIM
KEY0
KEY1
KEY2
KEYGND
GNDKEY
BLGND
GNDV
V+9V
V+5V
VIDEO
R
G
B
OSD
HSY
VSY
DOTSW
OSDST
OSDCK
OSDDT
NTSC/PAL
BRT
COLOR
TINT
VSEL
MODE1
MODE2
MODE3
MTRPW
MTR2
MTR1
DEGPUL1
DEGPUL2
DEGOSW
GNDM
VBU
V+33V
GND

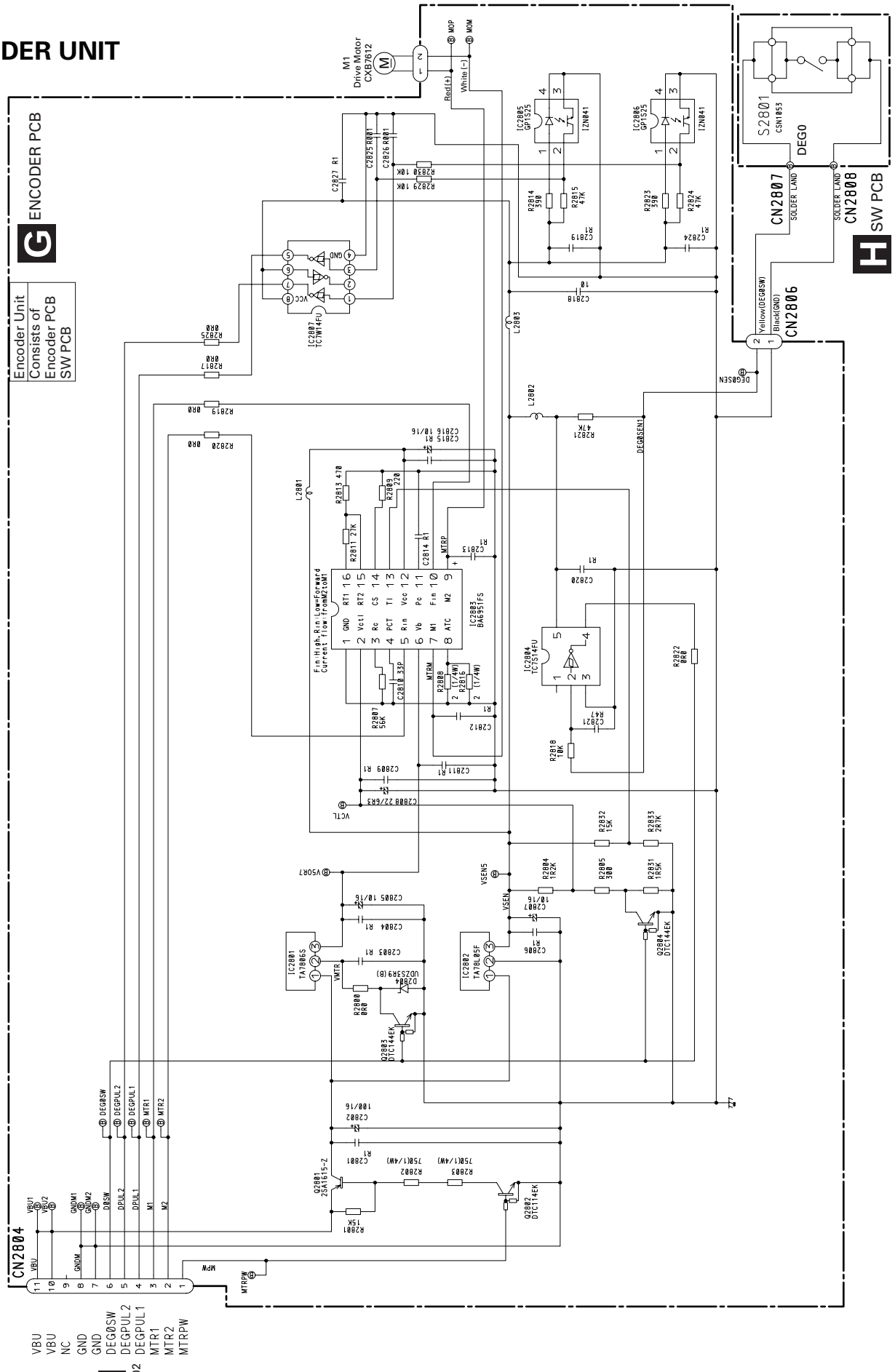
3.6 INVERTER PCB



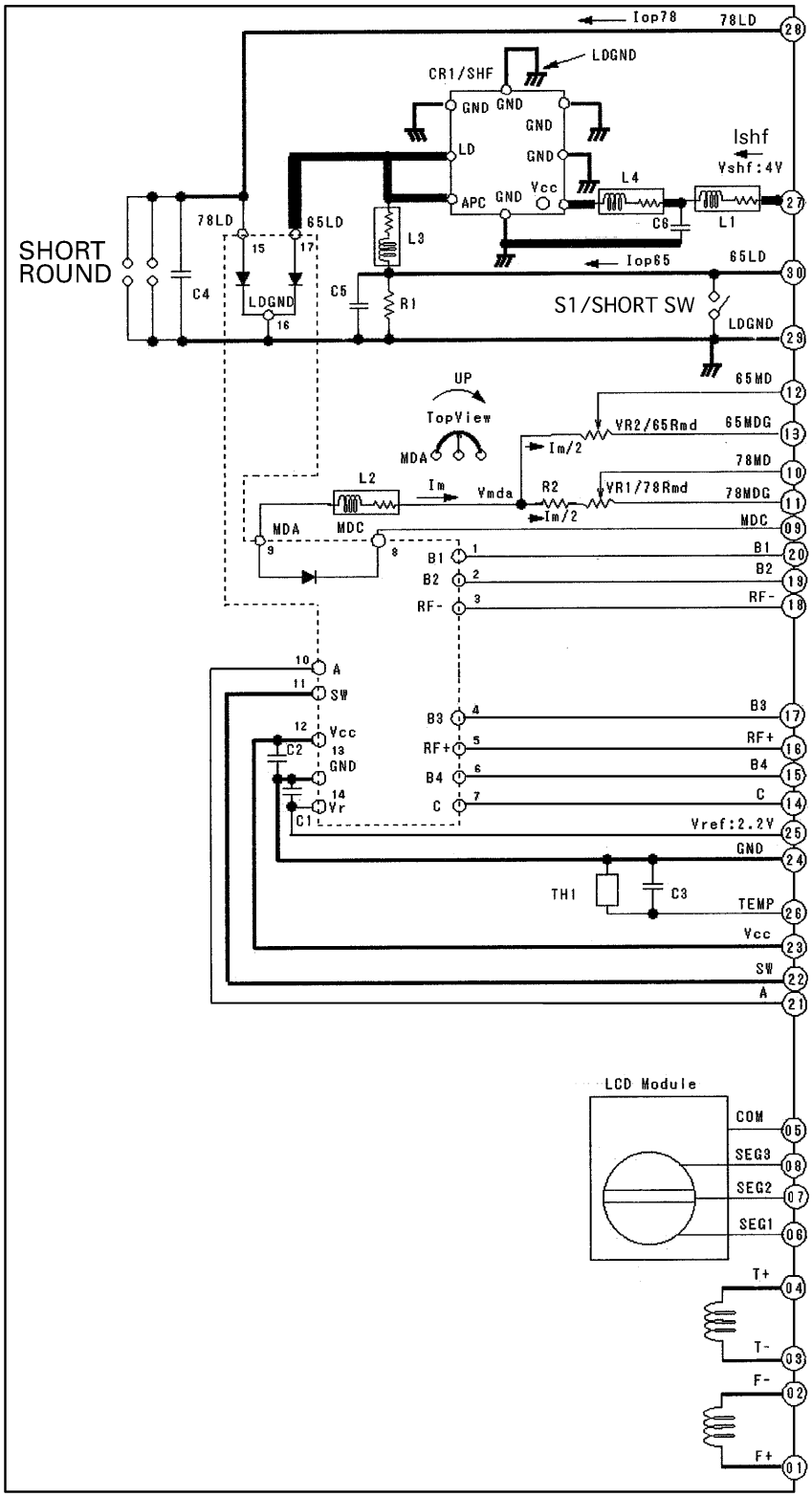
3.7GRILLE PCB



3.8 ENCODER UNIT

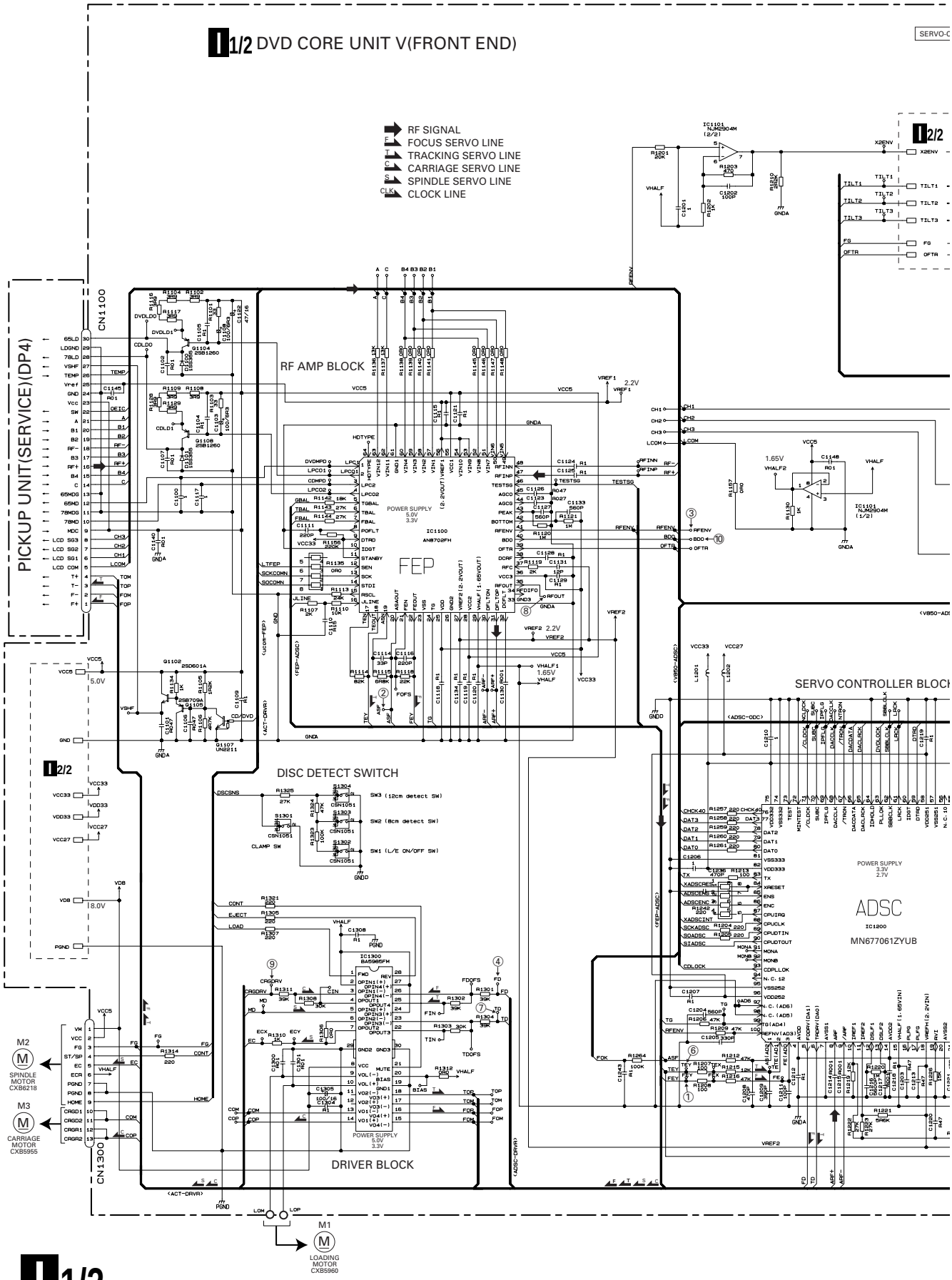


3.9 PU UNIT(REFERENCE)

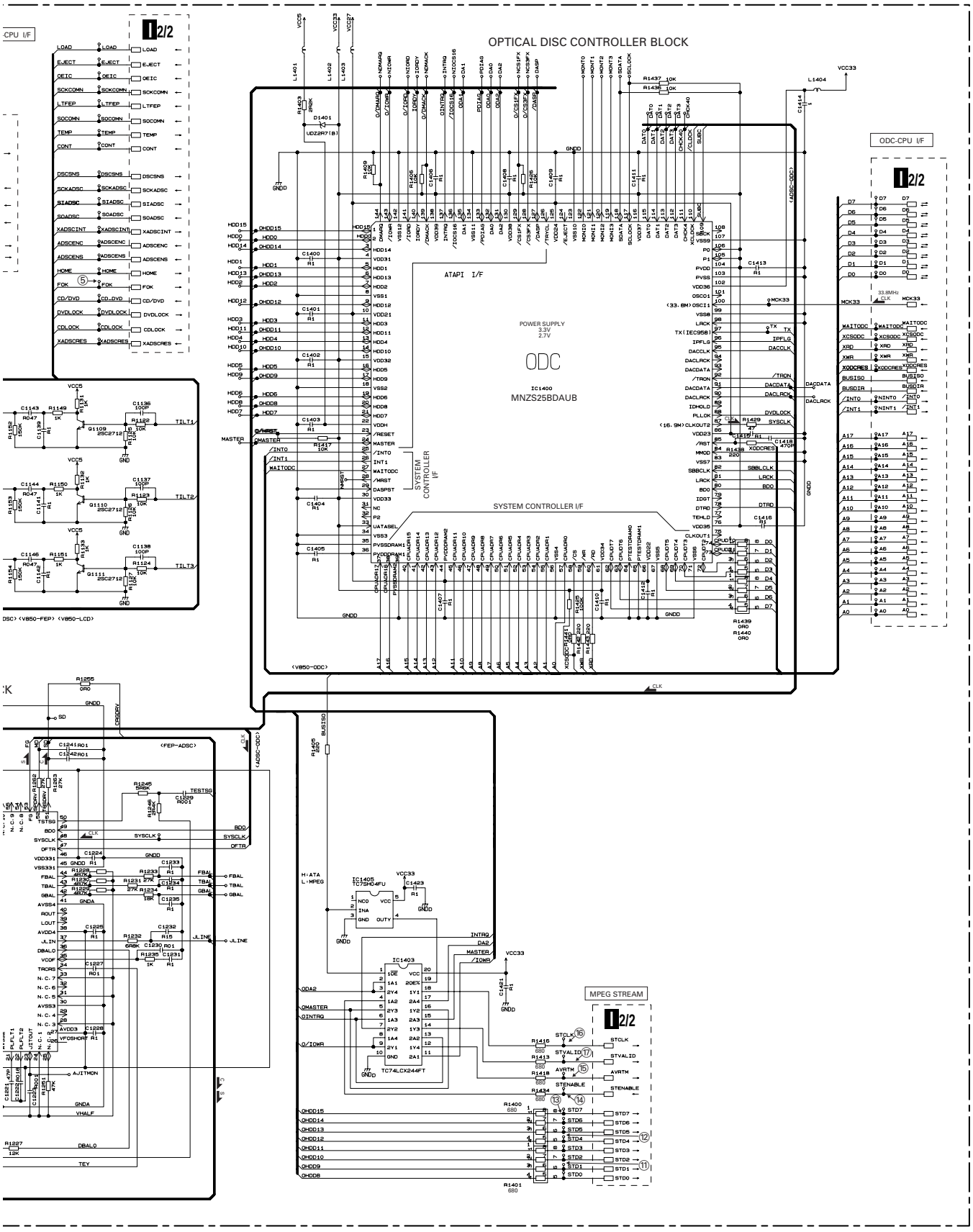


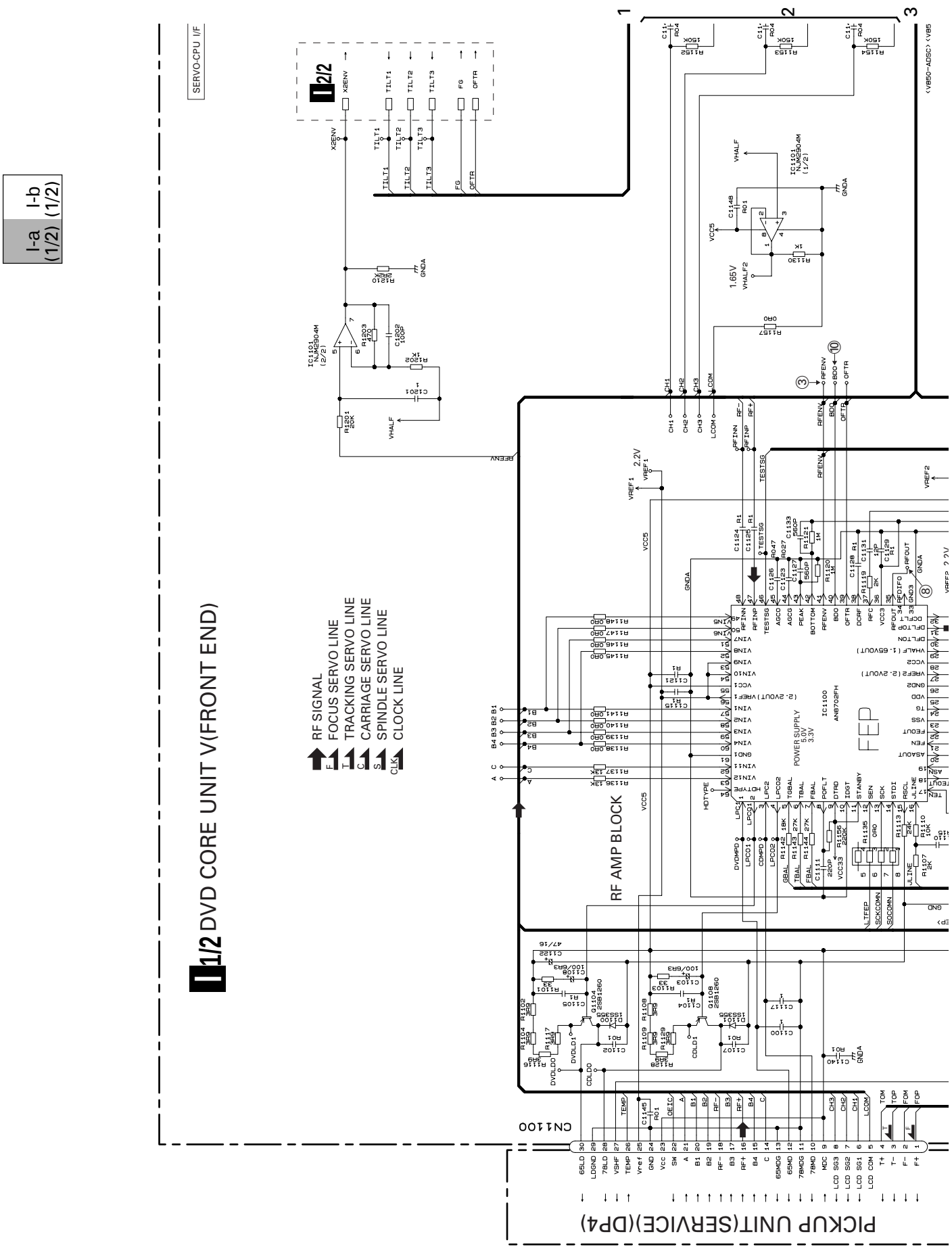
3.10 DVD MECHANISM MODULE(1/2)(GUIDE PAGE)

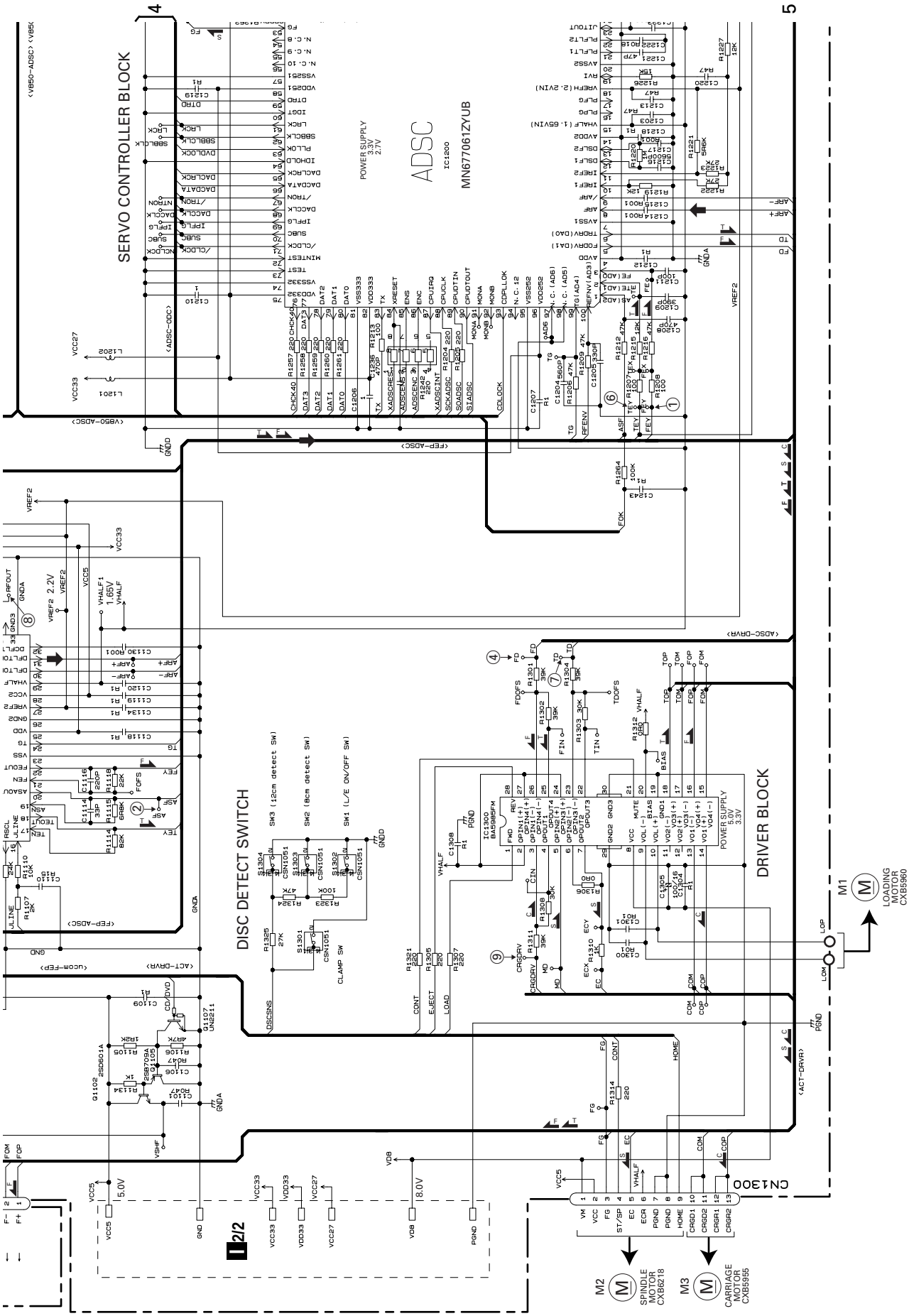
I-a 1/2

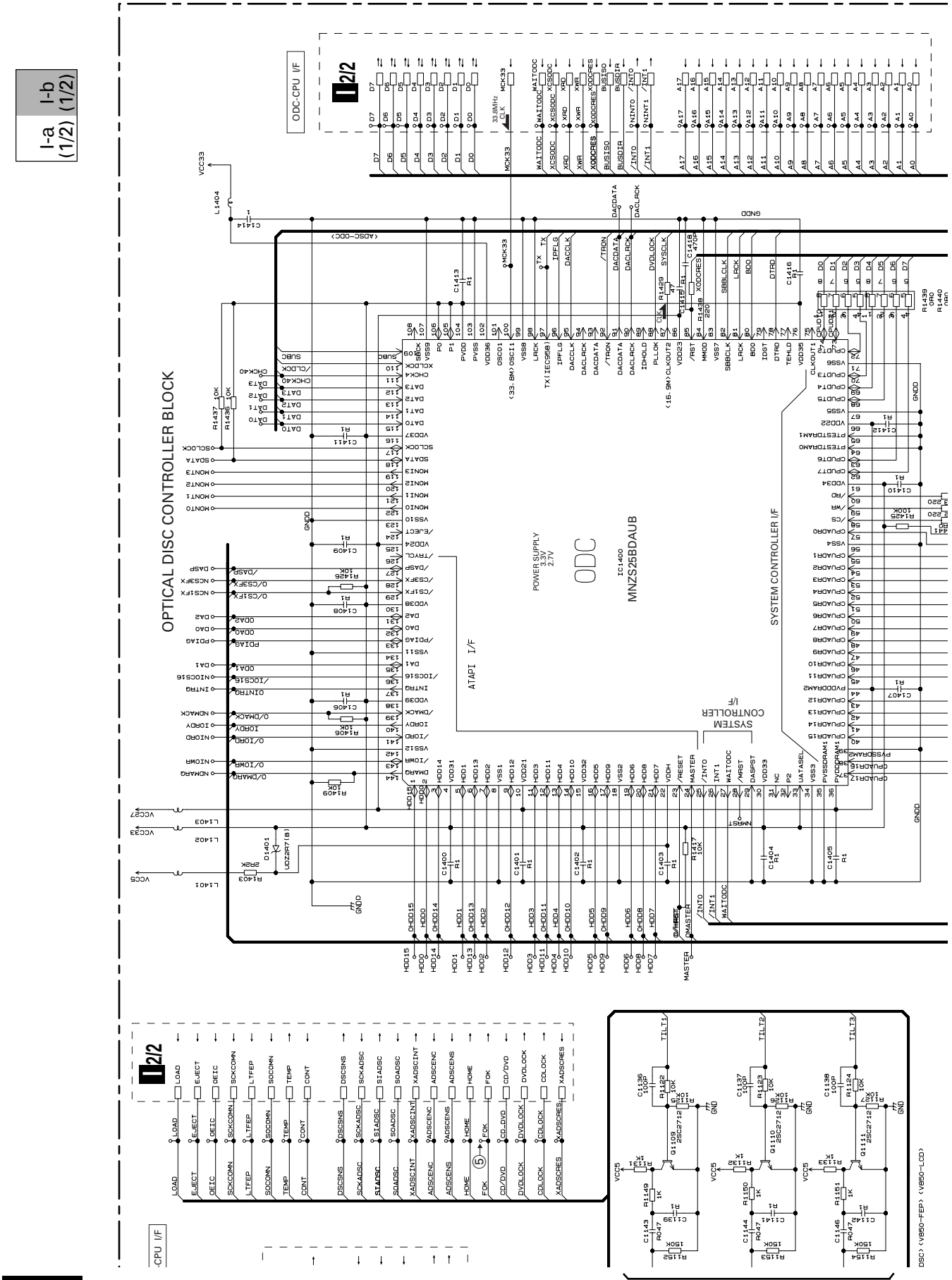


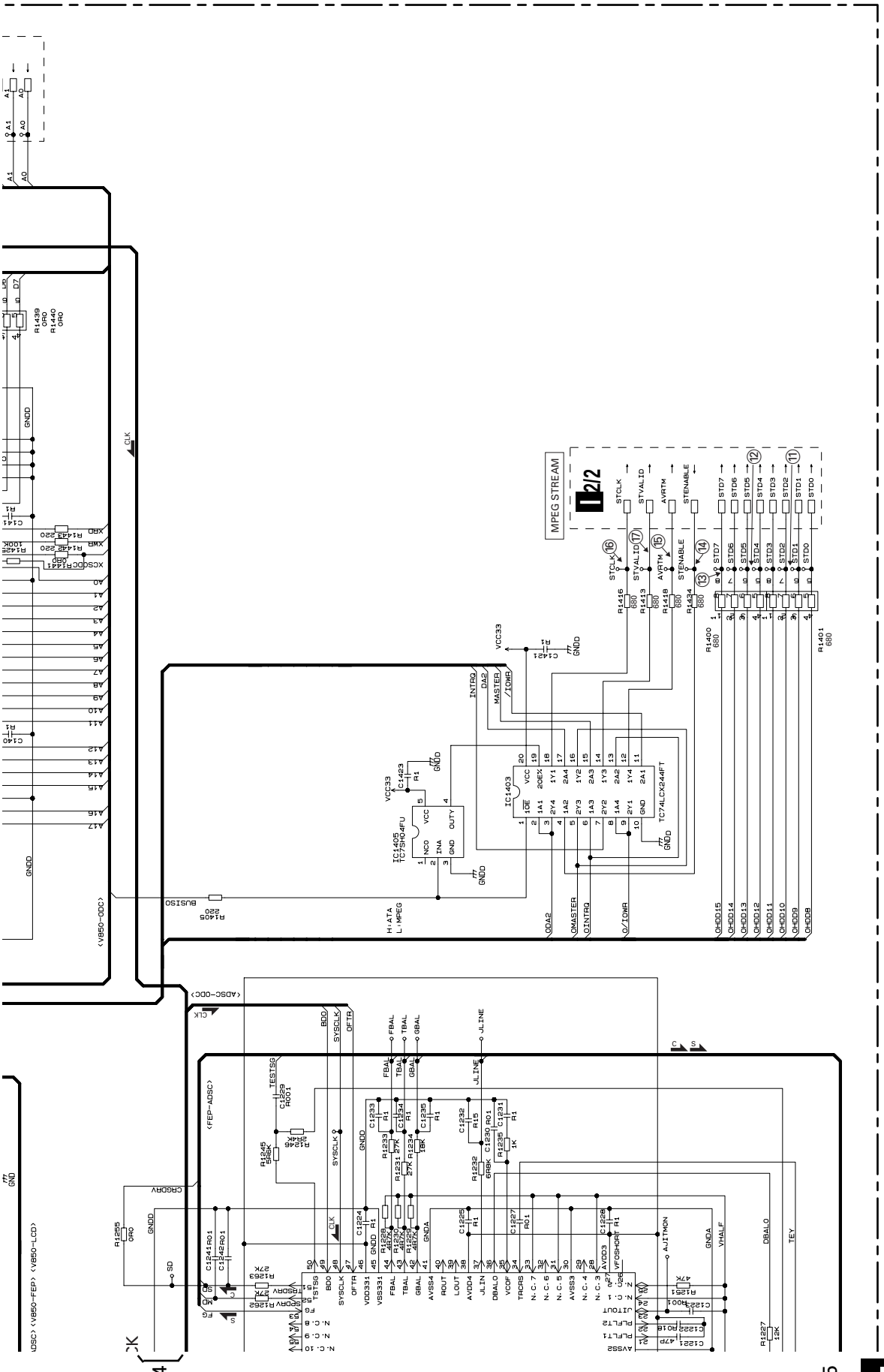
I-b 1/2


OPTICAL DISC CONTROLLER BLOCK
ATAPI I/F
POWER SUPPLY
3.3V
2.7V
ODC
IC1400
MNZS25BDAUB
SYSTEM CONTROLLER I/F
SYSTEM CONTROLLER I/F
ODC-CPU I/F
MPEG STREAM
CPU I/F
(FEP-ADSC)
(ADSC-ODC)
(V850-ODC)
(V850-FEP) (V850-LCD)
H:ATA
L:MPEG
IC1405
TC7SH04FU
IC1403
TC74LCX244FT


I-a (1/2)
I-b (1/2)
SERVO-CPU I/F
I 2/2
I 1/2 DVD CORE UNIT V(FRONT END)
RF SIGNAL
FOCUS SERVO LINE
TRACKING SERVO LINE
CARRIAGE SERVO LINE
SPINDLE SERVO LINE
CLOCK LINE
RF AMP BLOCK
FEP
PICKUP UNIT(SERVICE)(DP4)
CN1100

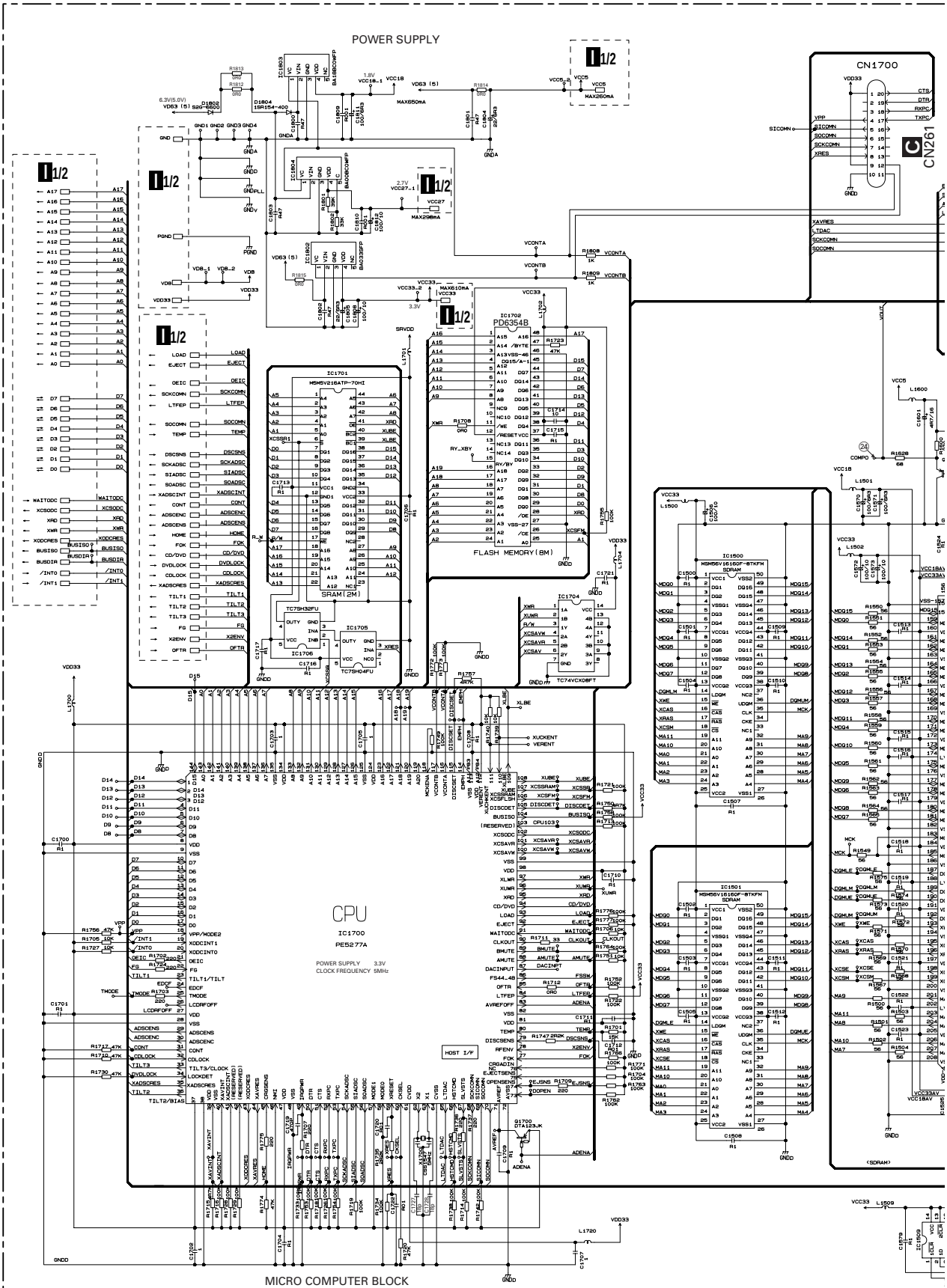

SERVO CONTROLLER BLOCK
ADSC
MN677061ZYUB
IC1200
POWER SUPPLY
3.3V
2.7V
DISC DETECT SWITCH
SW3 (12cm detect SW)
SW2 (8cm detect SW)
SW1 (L/E ON/OFF SW)
CLAMP SW
DRIVER BLOCK
IC1300
BA5986FM
POWER SUPPLY
5.0V
3.3V
CN1300
M1
LOADING
MOTOR
CXB5960
M2
SPINDLE
MOTOR
CXB6218
M3
CARRIAGE
MOTOR
CXB5955
I-2/2
I-a 1/2
I-a (1/2)
I-b (1/2)


I-a (1/2)
I-b (1/2)
OPTICAL DISC CONTROLLER BLOCK
ATAPI I/F
SYSTEM CONTROLLER I/F
SYSTEM CONTROLLER I/F
POWER SUPPLY 3.3V 2.7V
IC1400
MN2S25BDAUB
ODC
ODC-CPU I/F
I2/2
VCC33
GNDD
MCK33
33.8MHz
D7
D6
D5
D4
D3
D2
D1
D0
A17
A16
A15
A14
A13
A12
A11
A10
A9
A8
A7
A6
A5
A4
A3
A2
A1
A0
WAITODC
XCSODC
XRD
XWR
XODCRES
BUSIO
BUSDIR
/INT0
/INT1
DACDATA
DACLRCK
DACCLK
DVDLOCK
SYSCLK
SBBCLK
LRCK
BDO
DTRD
/RST
/MRST
/MASTER
/WAITODC
/INT0
/INT1
/DASP
/DCS3FX
/DCS1FX
/DA2
/DA1
/DA0
/PDIAG
/IOCS16
/INTRQ
/DMACK
/IORDY
/IORD
/IOWR
/DMARQ
/EJECT
/TRCL
/CLDCK
/SUBC
SCLOCK
SDATA
MONT0
MONT1
MONT2
MONT3
CHCK40
DAT0
DAT1
DAT2
DAT3
HDD0
HDD1
HDD2
HDD3
HDD4
HDD5
HDD6
HDD7
HDD8
HDD9
HDD10
HDD11
HDD12
HDD13
HDD14
HDD15
LOAD
EJECT
OEIC
SCKCOMN
LTFEP
SOCOMN
TEMP
CONT
DSCSNS
SCKADSC
SIADSC
SOADSC
XADSCINT
ADSCENC
ADSCENS
HOME
FOK
CD/DVD
DVDLOCK
CDLOCK
XADSCRES
TILT1
TILT2
TILT3
Q1109 2SC2712
Q1110 2SC2712
Q1111 2SC2712
VCC5
GND
DSC〉〈VB50-FEP〉〈VB50-LCD〉


MPEG STREAM
I-2/2
STCLK
STVALID
AVRTM
STENABLE
STD7
STD6
STD5
STD4
STD3
STD2
STD1
STD0
R1416 680
R1413 680
R1418 680
R1434 680
R1400 680
R1401 680
VCC33
GNDD
IC1405 TC7SH04FU
IC1403 TC74LCX244FT
INTRQ
DA2
MASTER
/IOWR
BUSISO
R1405 220
H:ATA L:MPEG
DDA2
DMASTER
DINTRQ
D/IOWR
DHDD15
DHDD14
DHDD13
DHDD12
DHDD11
DHDD10
DHDD9
DHDD8
<VB50-ODC>
<ADSC-ODC>
<FEP-ADSC>
<VB50-FEP>
<VB50-LCD>
CLK
SYSCLK
DFTR
FBAL
TBAL
GBAL
JLINE
TESTSG
C1229 R001
R1245 56RK
R1246 2R4
C1233 R1
C1234 R1
C1235 R1
C1232 R15
C1230 R01
C1231 R1
R1233 27K
R1231 27K
R1234 18K
R1232 68RK
R1235 1K
C1224 R1
R1255 0R0
CRGDRV
C1241 R01
C1242 R01
R1263 27K
R1262 27K
TSDRV
TSSG
C1225 R1
C1227 R01
C1228 R1
VFOSHORT
AJTMON
GNDA
VHALF
DBALO
TEY
R1251 47K
C1224 R001
C1222 R018
C1221 47P
R1227 12K
AVDD3
AVSS2
VCOF
TRCRS
AVSS3
AVSS4
AVDD4
VDD331
VSS331
JLIN
ROUT
LOUT
JITOUT
PLFLT2
PLFLT1
N.C.1
N.C.2
N.C.3
N.C.4
N.C.5
N.C.6
N.C.7
N.C.8
N.C.9
N.C.10
R1439 0R0
R1440 0R0
R1442 220
R1443 220
R1442 100K
XSCSDDC R1441 0R0
XRD
XWR
C141
C140
C142
GND
SD
MD
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
A16
A17
D0
D1
D2
D3
D4
D5
D6
D7

3.11 DVD MECHANISM MODULE(2/2)(GUIDE PAGE)

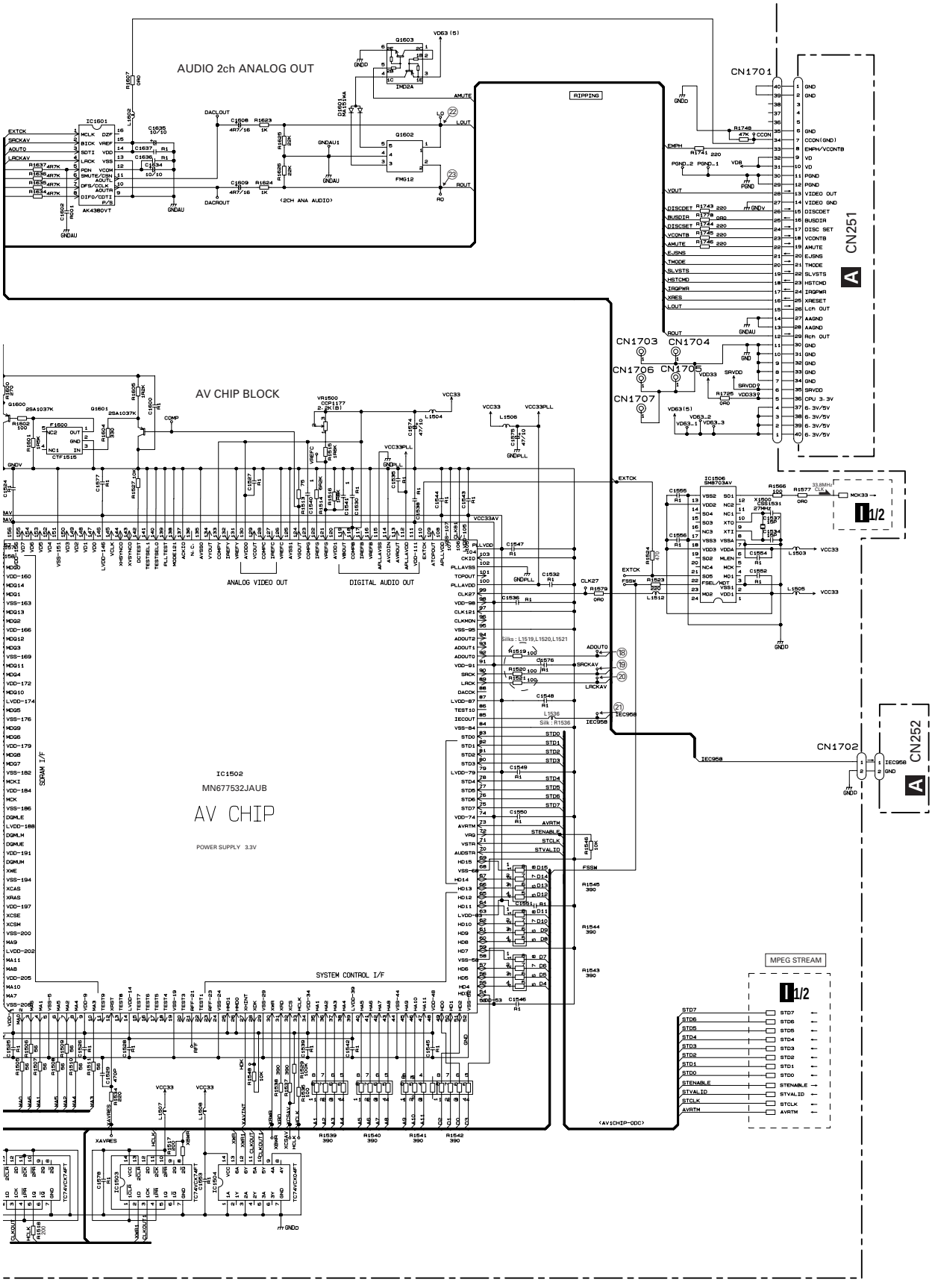
I-a 2/2

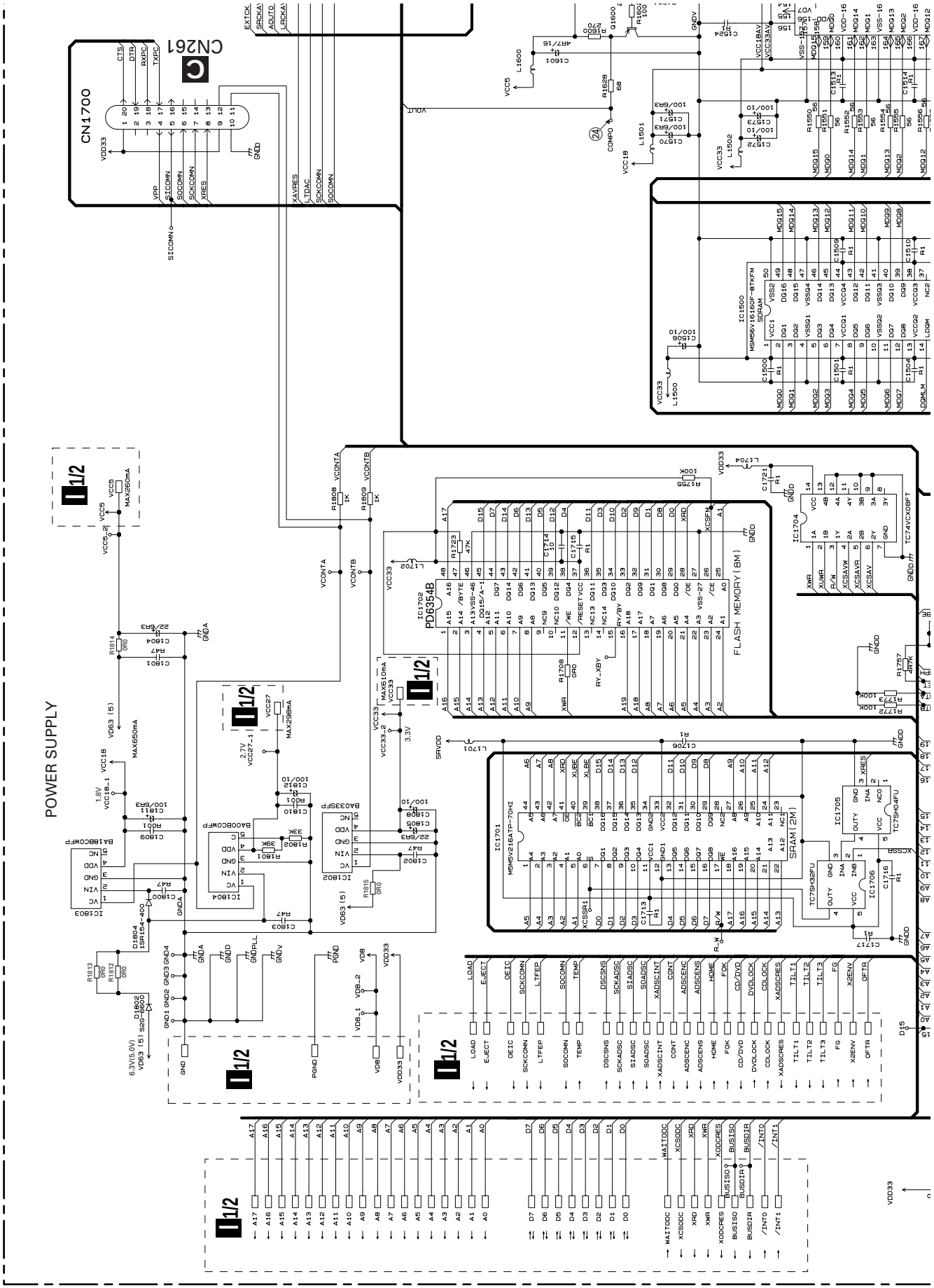


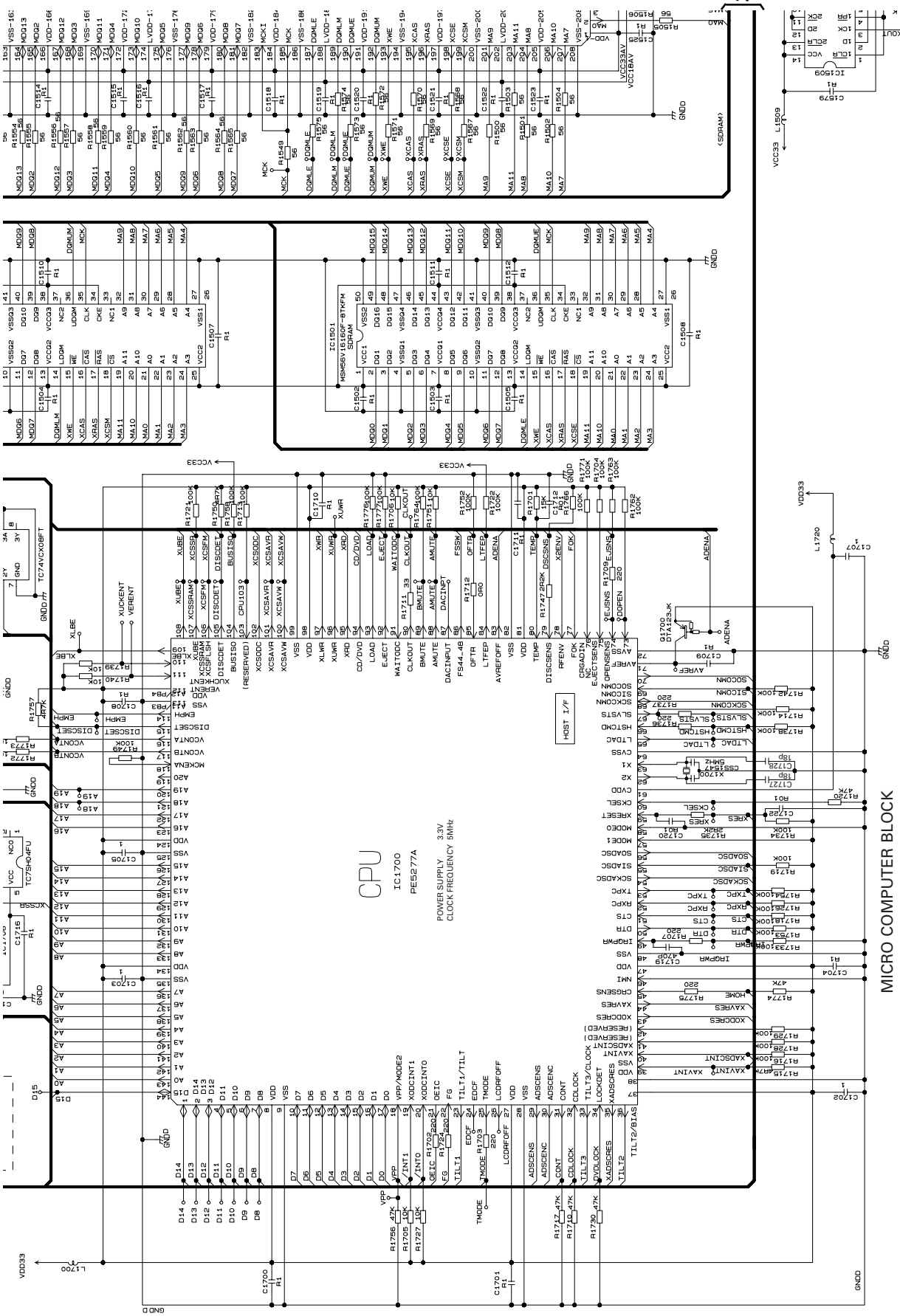
I 2/2

I-b 2/2

I 2/2 DVD CORE UNIT V(BACK END)

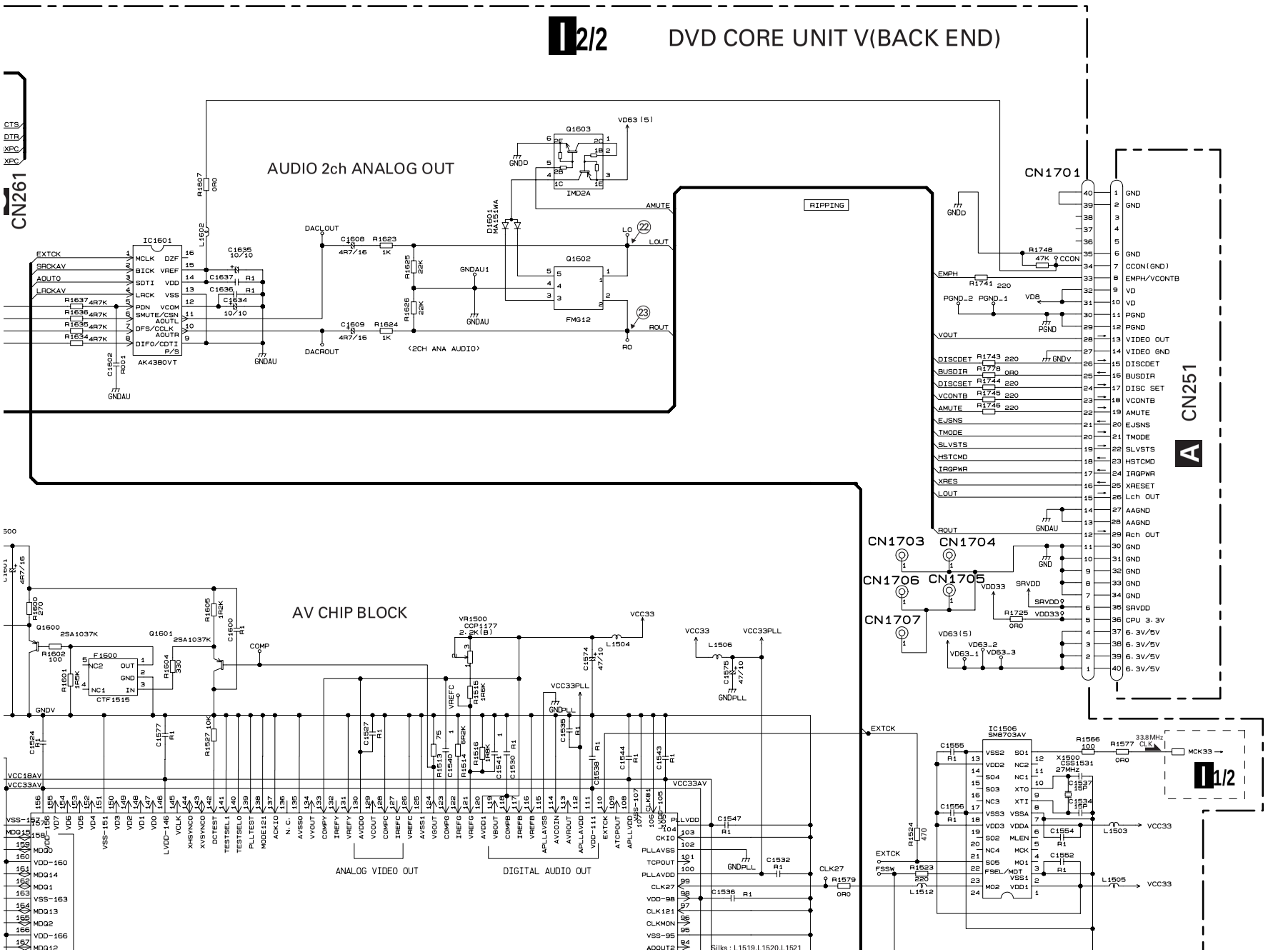



I-a (2/2)
I-b (2/2)
CN1700
CN261
IC1500
MSM56V16160F-8TK-FM
SDRAM
IC1702
PD6354B
FLASH MEMORY(8M)
IC1701
MSM5V216ATP-70HI
SRAM(2M)
IC1704
TC7WCX6BFT
IC1705
TC7SH32FU
IC1706
TC7SH04FU
POWER SUPPLY
I 1/2
I-a 2/2

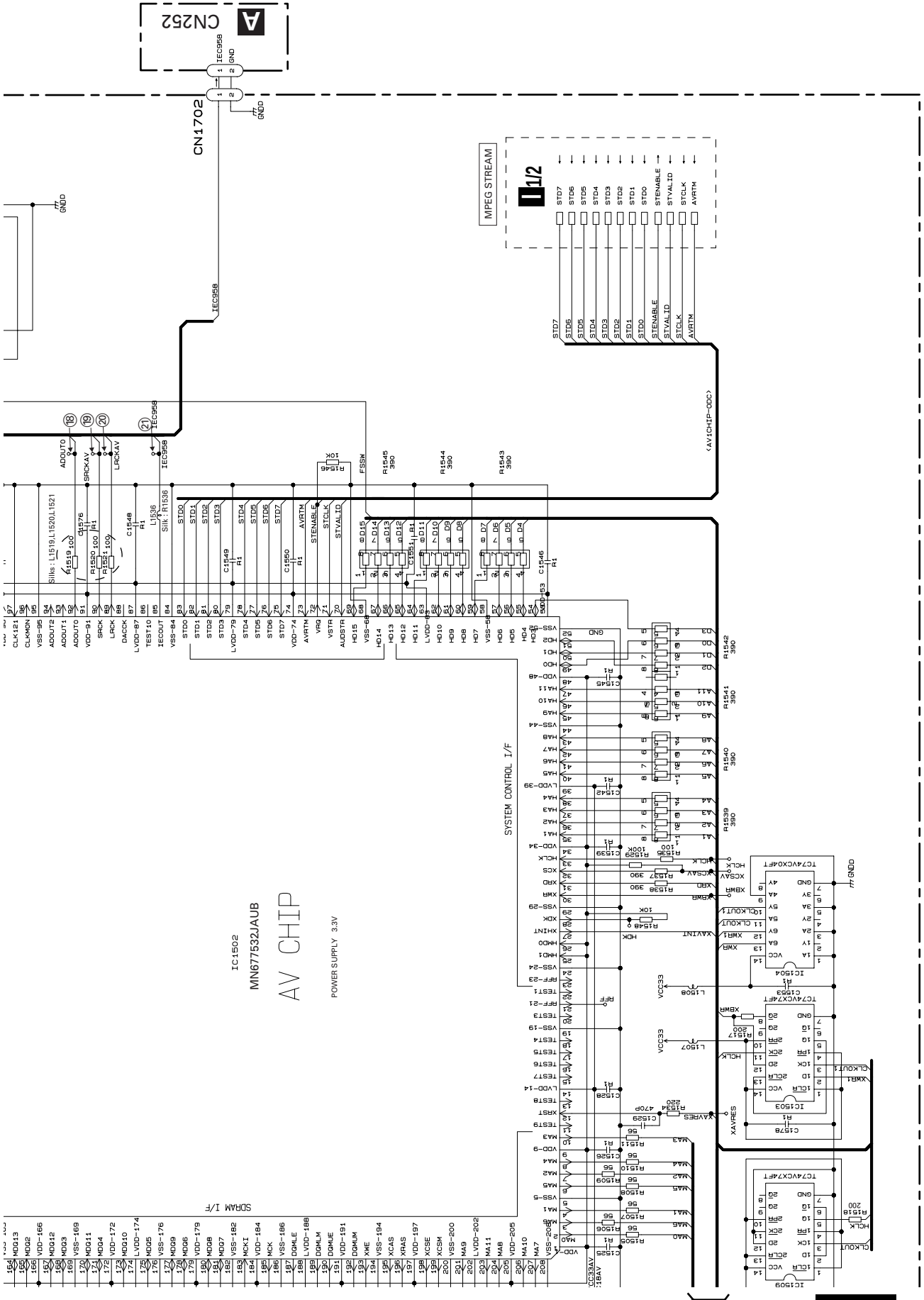

CPU
IC1700
PE5277A
POWER SUPPLY 3.3V
CLOCK FREQUENCY 5MHz
MICRO COMPUTER BLOCK
HOST I/F
(SDRAM)
IC1501
MSM56V16160F-8TKFM
SDRAM
IC1509
TC74VCX08FT
TC7SH04FU
Q1700
DTA123JK
L1700
L1720
L1599
L1579
VDD33
VCC33
GNDD
GNDA
ADENA

I-b 2/2

I 2/2 DVD CORE UNIT V(BACK END)



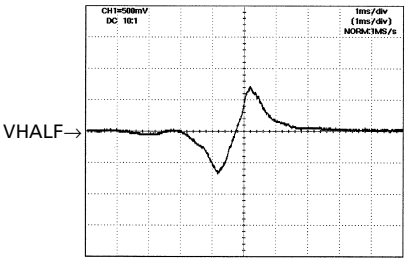
I 1/2


A CN252
IEC958
GND
CN1702
MPEG STREAM
I 1/2
STD7
STD6
STD5
STD4
STD3
STD2
STD1
STD0
STENABLE
STVALID
STCLK
AVRTM
SYSTEM CONTROL I/F
AV CHIP
IC1502
MN677532JAUB
POWER SUPPLY 3.3V
SDRAM I/F
TC74VCX04FT
TC74VCX74FT
XAVRES
XAVINT
XSCSAV
XSCKAV
XSWAV
XSWFR
HCLK
CLKOUT
VCC33
GND
2
I-b 2/2

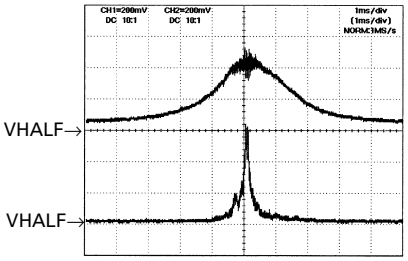
● **Waveforms**

Note:1. The encircled number denote measuring pointes in the circuit diagram.
2. Reference voltage VHALF : 1.65V

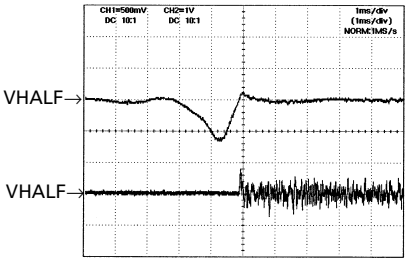
① FEY 500mV/div. 1ms/div.
Focus search



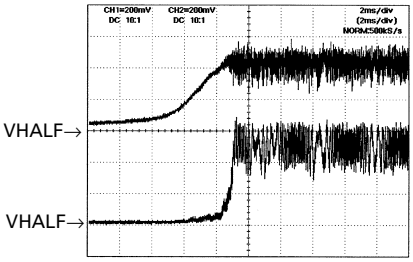
② CH1: ASF
③ CH2: RFENV 200ms/div. 1ms/div.
Focus search



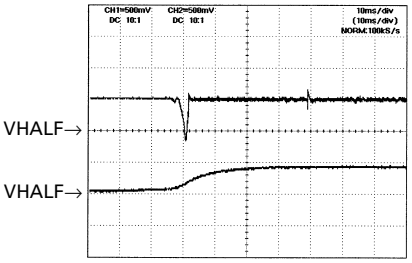
① CH1: FEY 500mV/div. 1ms/div.
④ CH2: FD 1V/div. 1ms/div.
Focus close



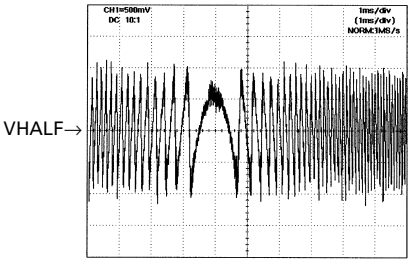
② CH1: ASF
③ CH1: RFENV 200mV/div. 2ms/div.
Focus close



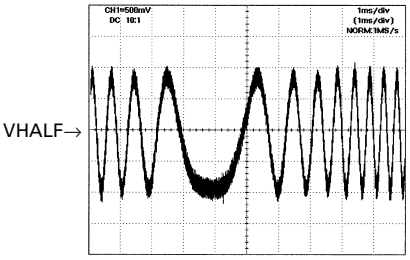
① CH1: FEY
⑤ CH2: FOK 500mV/div. 10ms/div.
Focus close



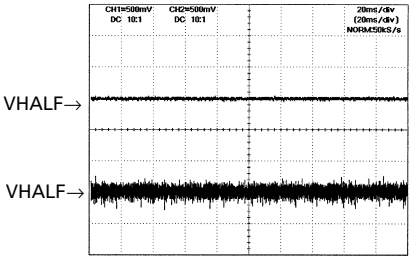
⑥ CH1: TEY 500mV/div. 1ms/div.
Focus close(DVD)



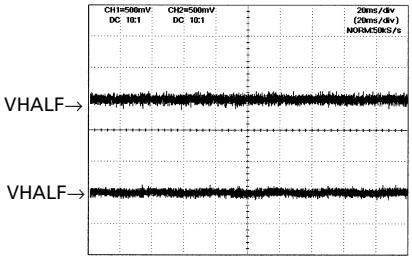
⑥ CH1: TEY 500mV/div. 1ms/div.
Focus close(CD)



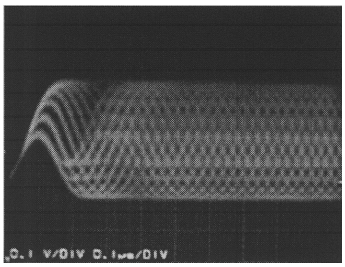
① CH1: FEY
④ CH2: FD 500mV/div.20ms/div.
Play



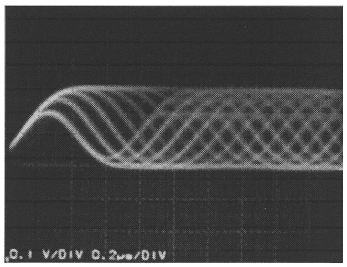
⑥ CH1: TEY
⑦ CH2: TD 500mV/div.20ms/div.
Play



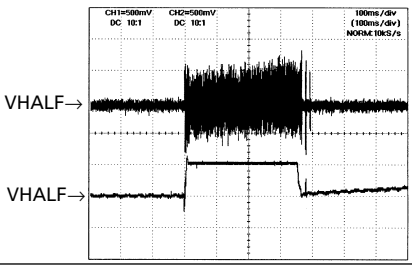
⑧ CH1: RFOUT 0.1V/div. 0.1µs/div.
Play(DVD surroundings on inside)



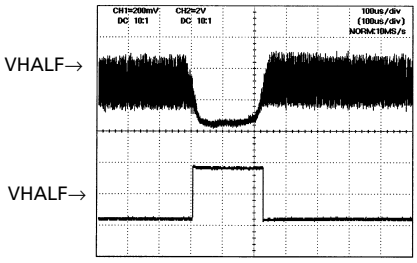
⑧ CH1: RFOUT 0.1V/div. 0.2µs/div.
Play(CD)



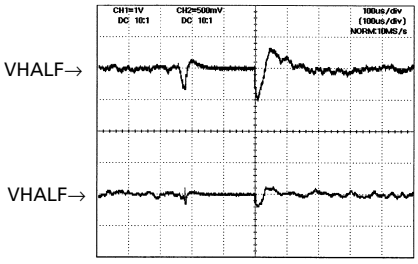
⑥ CH1: TEY 500mV/div. 100ms/div.
⑨ CH2: CRGDRV
Surroundings on inside->
surroundings on outside



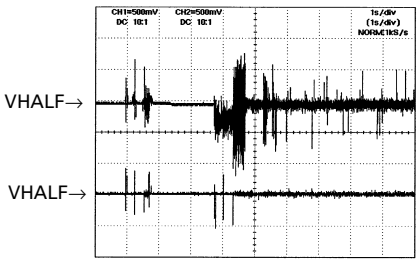
⑧ CH1: RFOUT 200mV/div. 100µs/div.
⑩ CH2: BDO 2V/div. 100µs/div.
Black dot



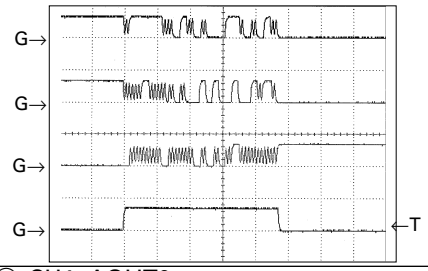
④ CH1: FD 1V/div. 100µs/div.
⑦ CH2: TD 500mV/div. 100µs/div.
Black dot



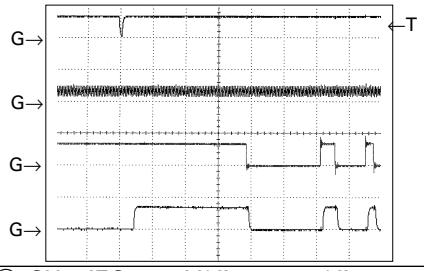
⑥ CH1: TEY
① CH2: FEY 500mV/div.1s/div.
EDC1 mode set up(DVD)



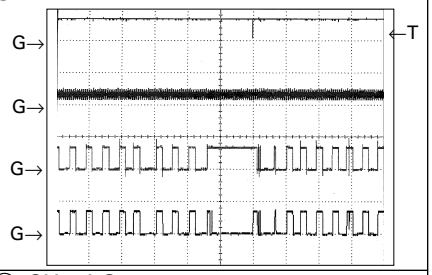
⑪ CH1: STD1
⑫ CH2: STD4
⑬ CH3: STD7
⑭ CH4: STENABLE
5V/div. 2µs/div.



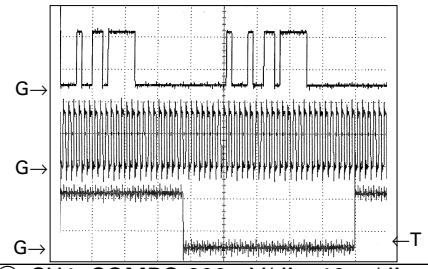
⑮ CH1: AVRTM
⑯ CH2: STCLK
⑰ CH3: STVALID
⑭ CH4: STENABLE
5V/div. 2µs/div.



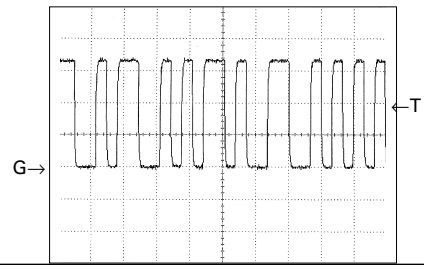
⑮ CH1: AVRTM
⑯ CH2: STCLK
⑰ CH3: STVALID
⑭ CH4: STENABLE
5V/div. 50µs/div.



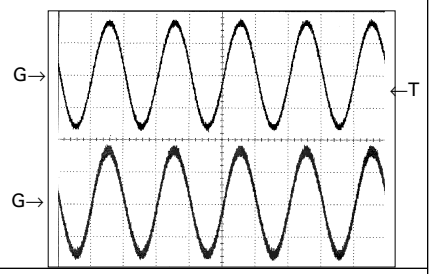
⑱ CH1: AOUT0
⑲ CH2: SRCKAV
⑳ CH3: LRCKAV
2V/div. 2µs/div.



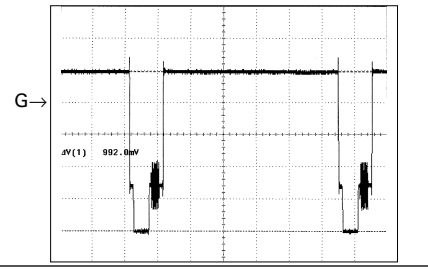
㉑ CH1: IEC958 1V/div. 500ns/div.



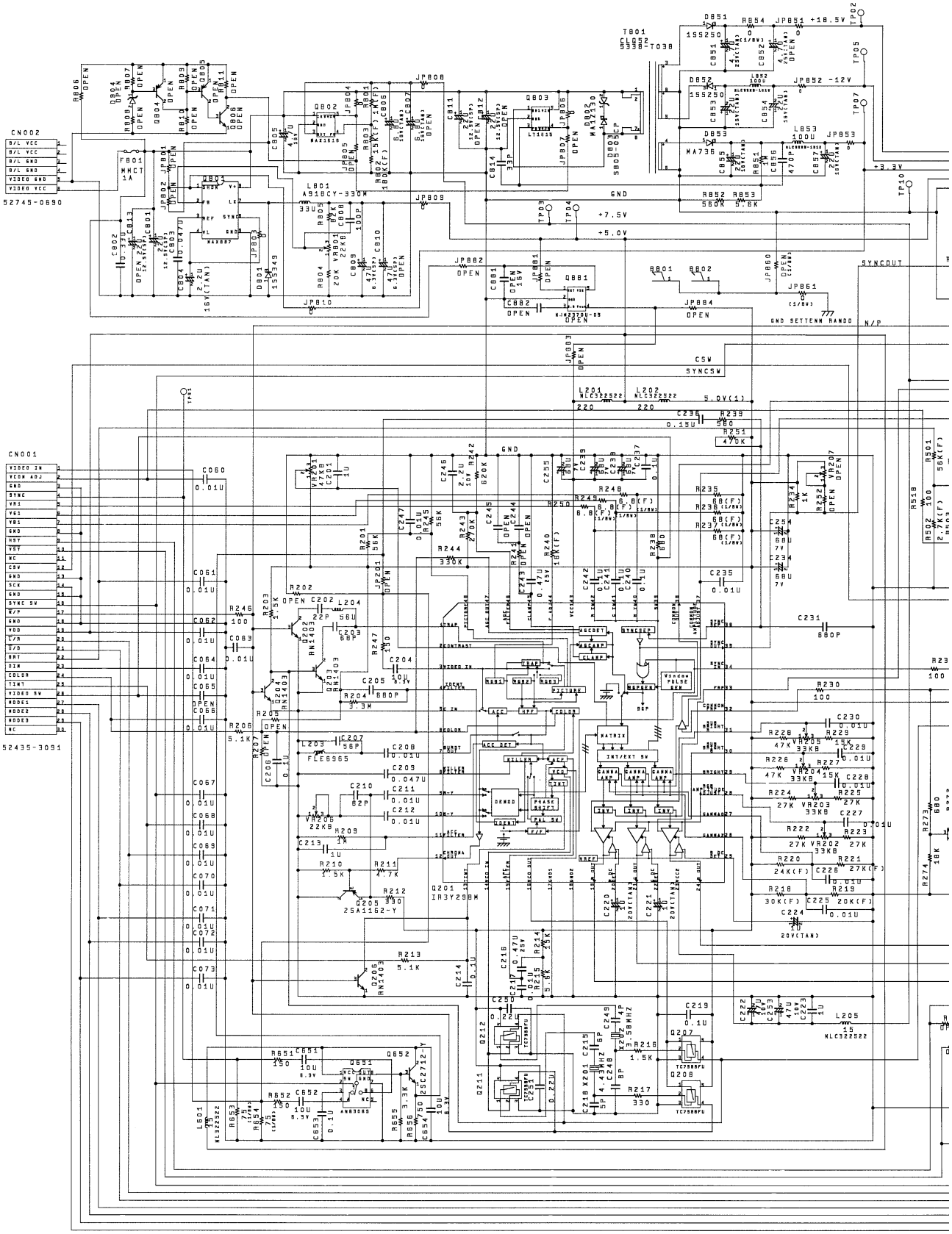
㉒ CH1: LO
㉓ CH2: RO
1V/div. 500µs/div.



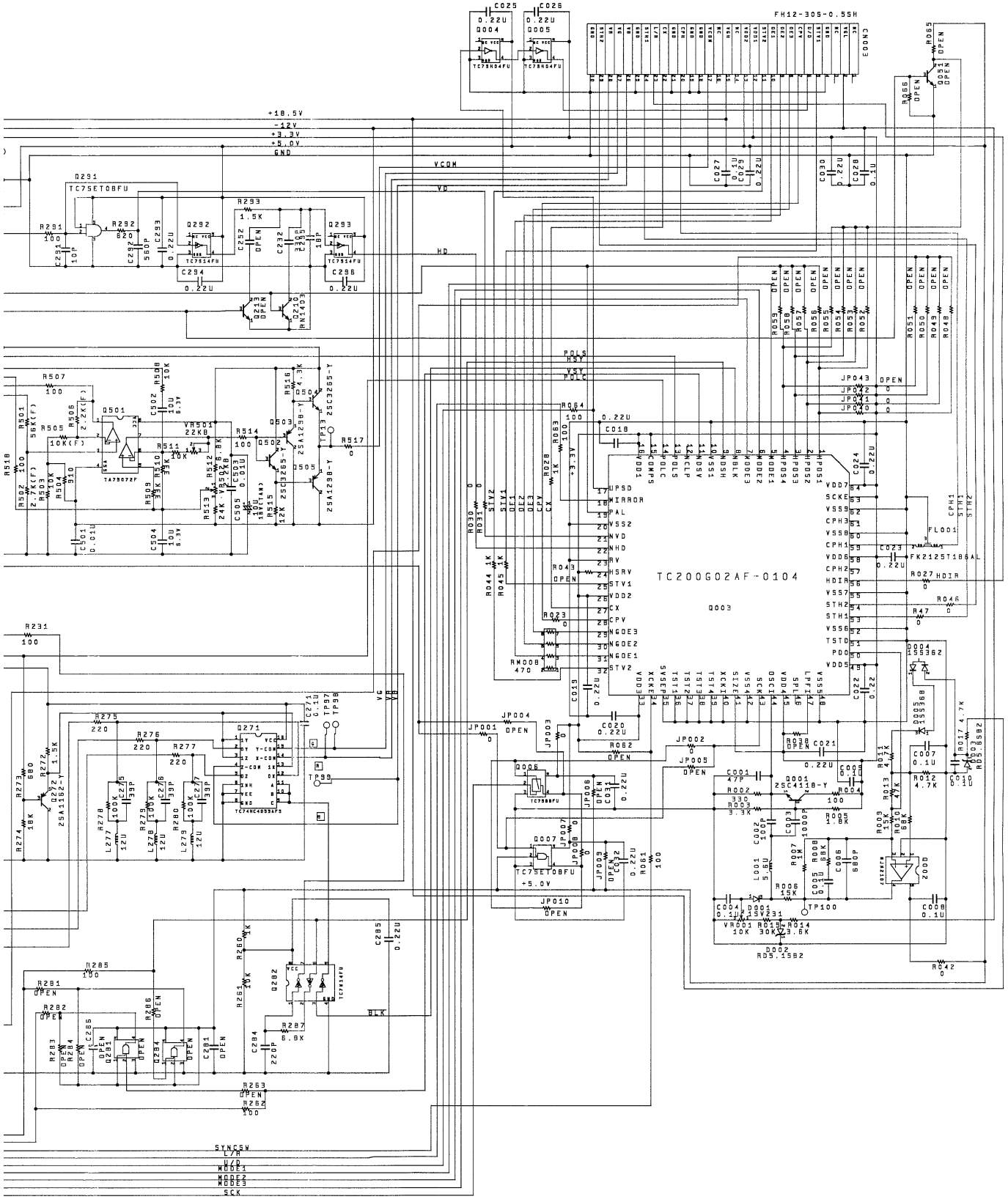
㉔ CH1: COMPO 200mV/div. 10µs/div.
[White 100% output]



3.12 VIDEO SCHEMATIC



J VIDEO SCHEMATIC



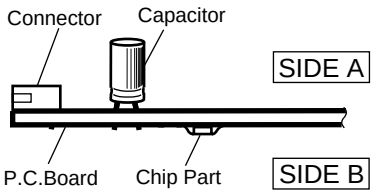
A CONTROL PCB

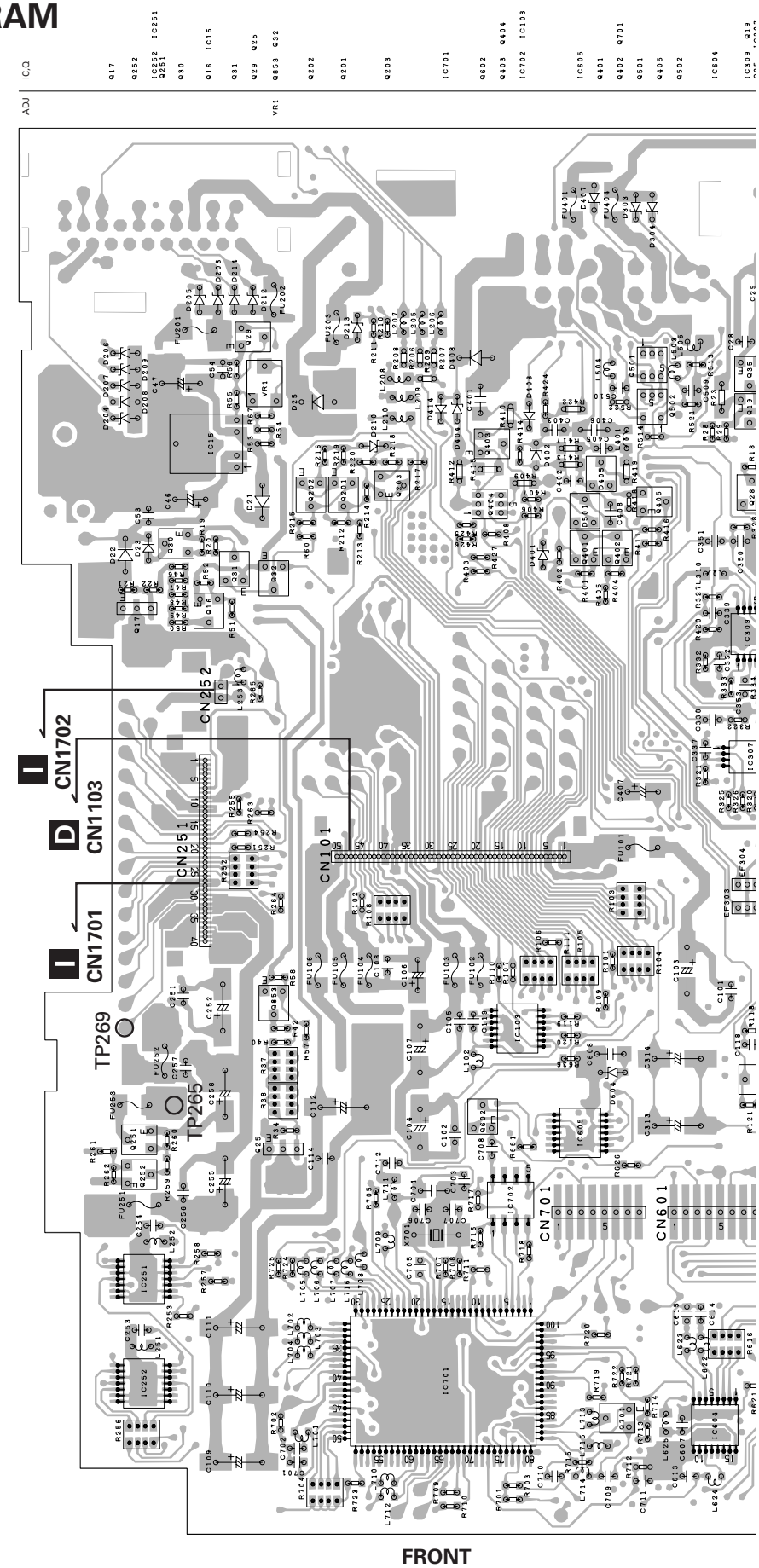
4. PCB CONNECTION DIAGRAM

4.1 CONTROL PCB

NOTE FOR PCB DIAGRAMS

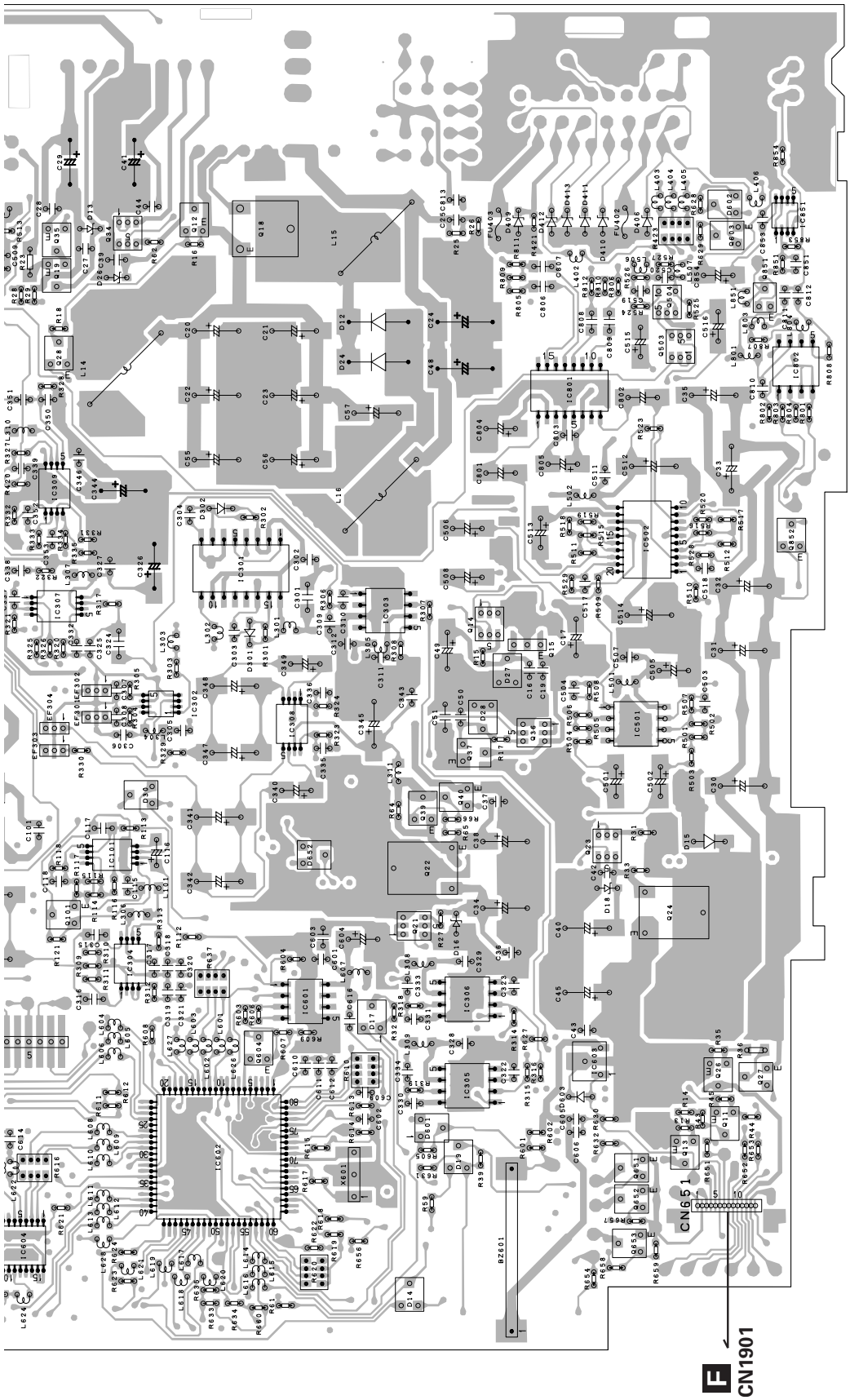
1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



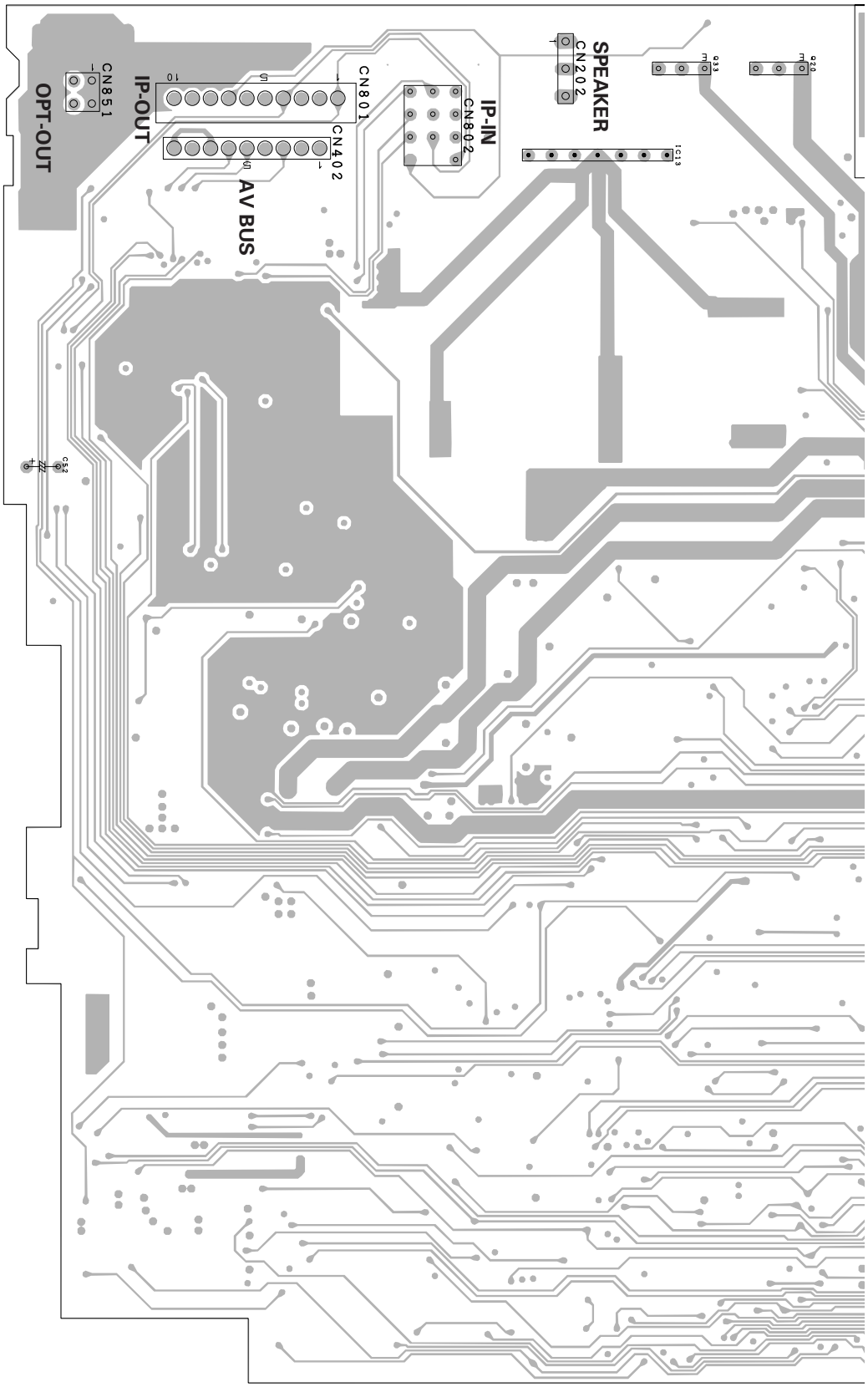


A

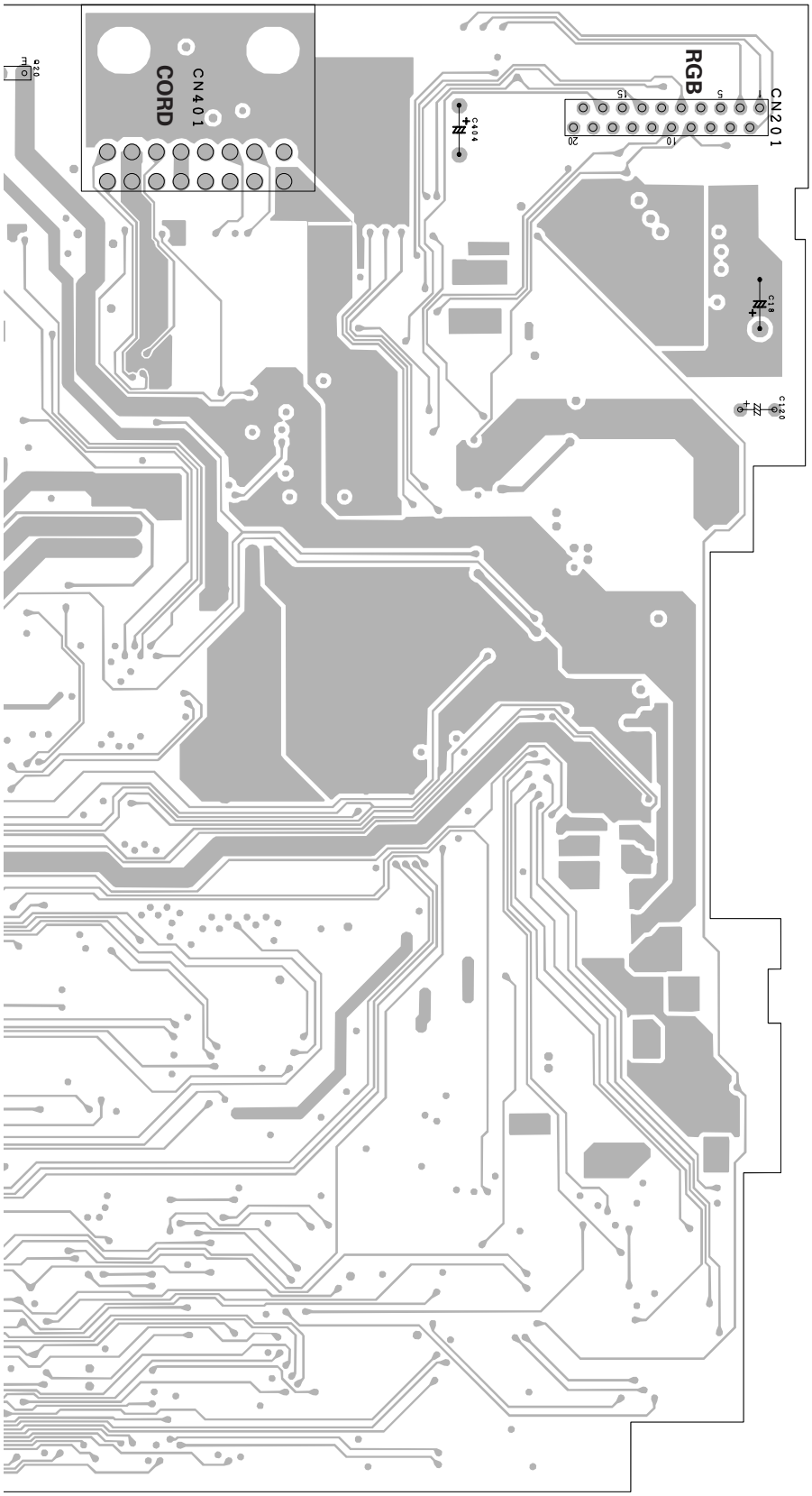
SIDE A



A CONTROL PCB

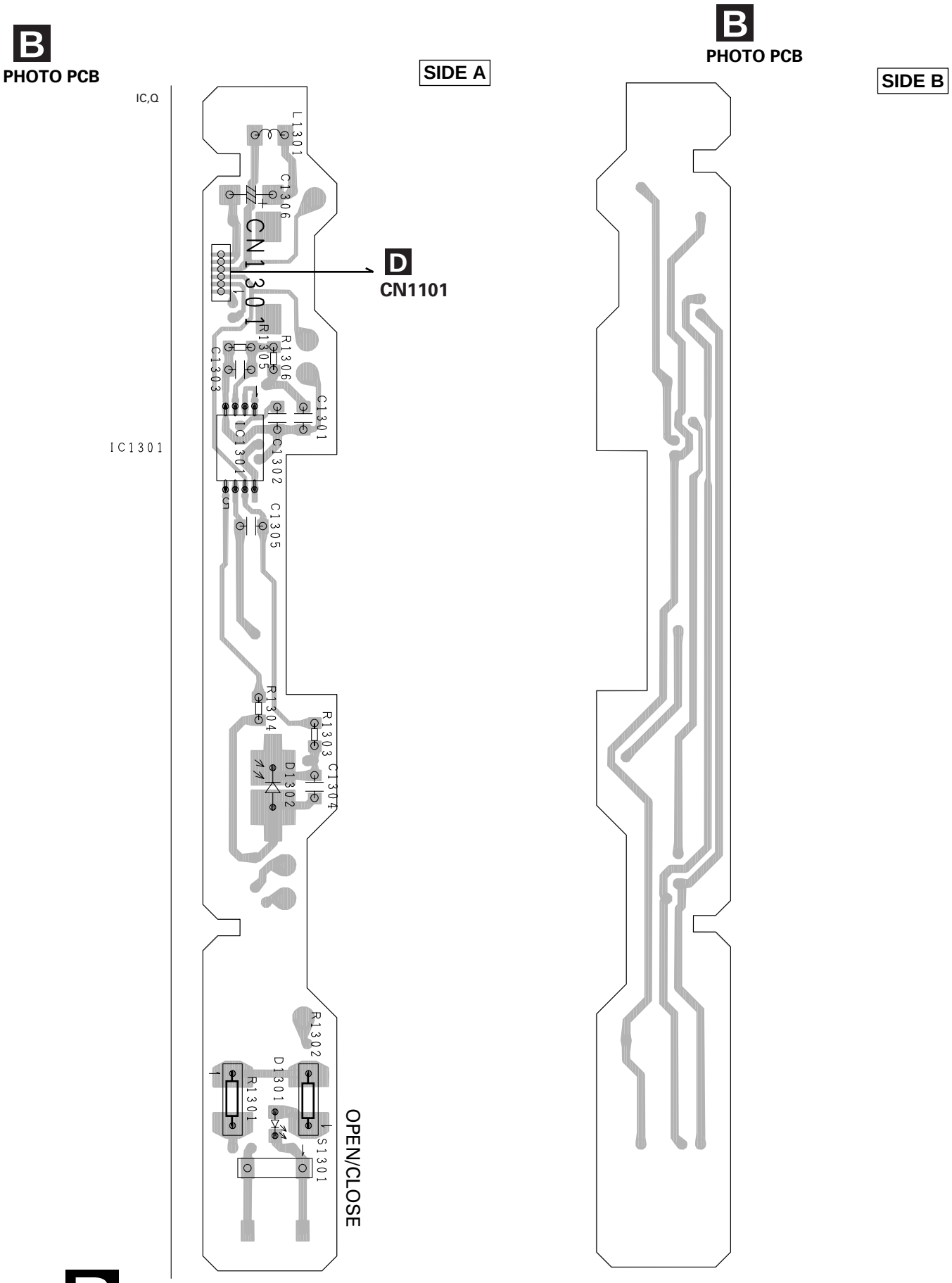


SIDE B



FRONT

4.2 PHOTO PCB

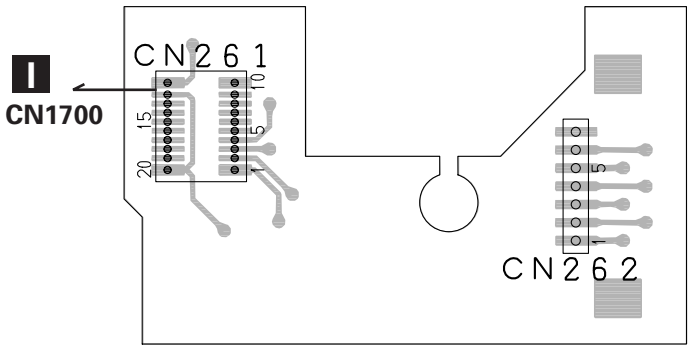

B
PHOTO PCB
SIDE A
IC,Q
L1301
C1306
CN1301
D
CN1101
R1305
R1306
C1303
C1301
IC1301
C1302
C1305
R1304
R1303
C1304
D1302
R1302
D1301
R1301
S1301
OPEN/CLOSE
B
PHOTO PCB
SIDE B

4.3 EXTENSION PCB

C

EXTENSION PCB

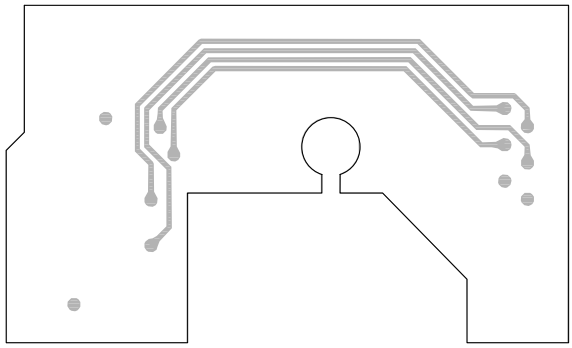
SIDE A



C

EXTENSION PCB

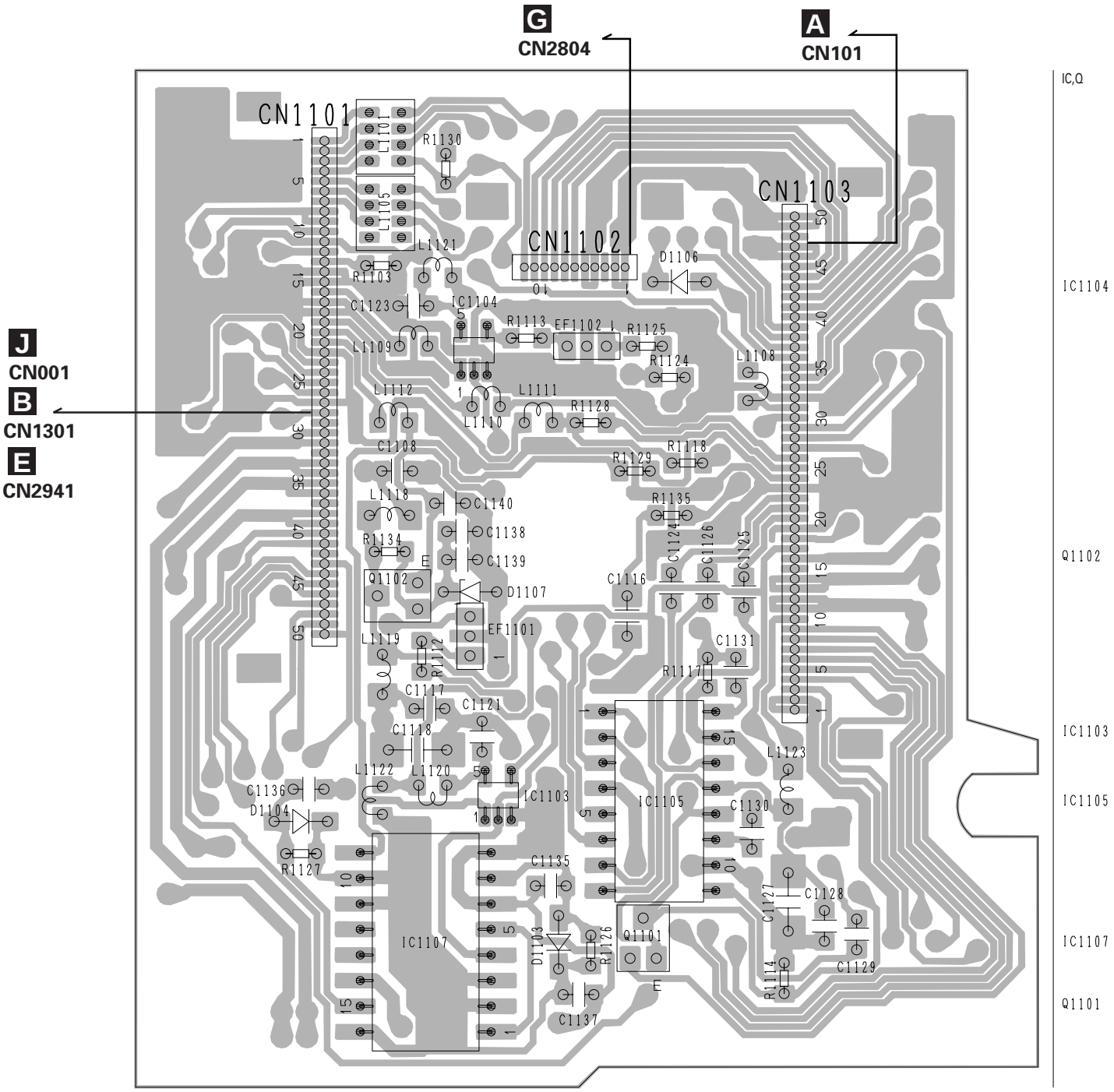
SIDE B



4.4 RELAY UNIT

D
RELAY UNIT

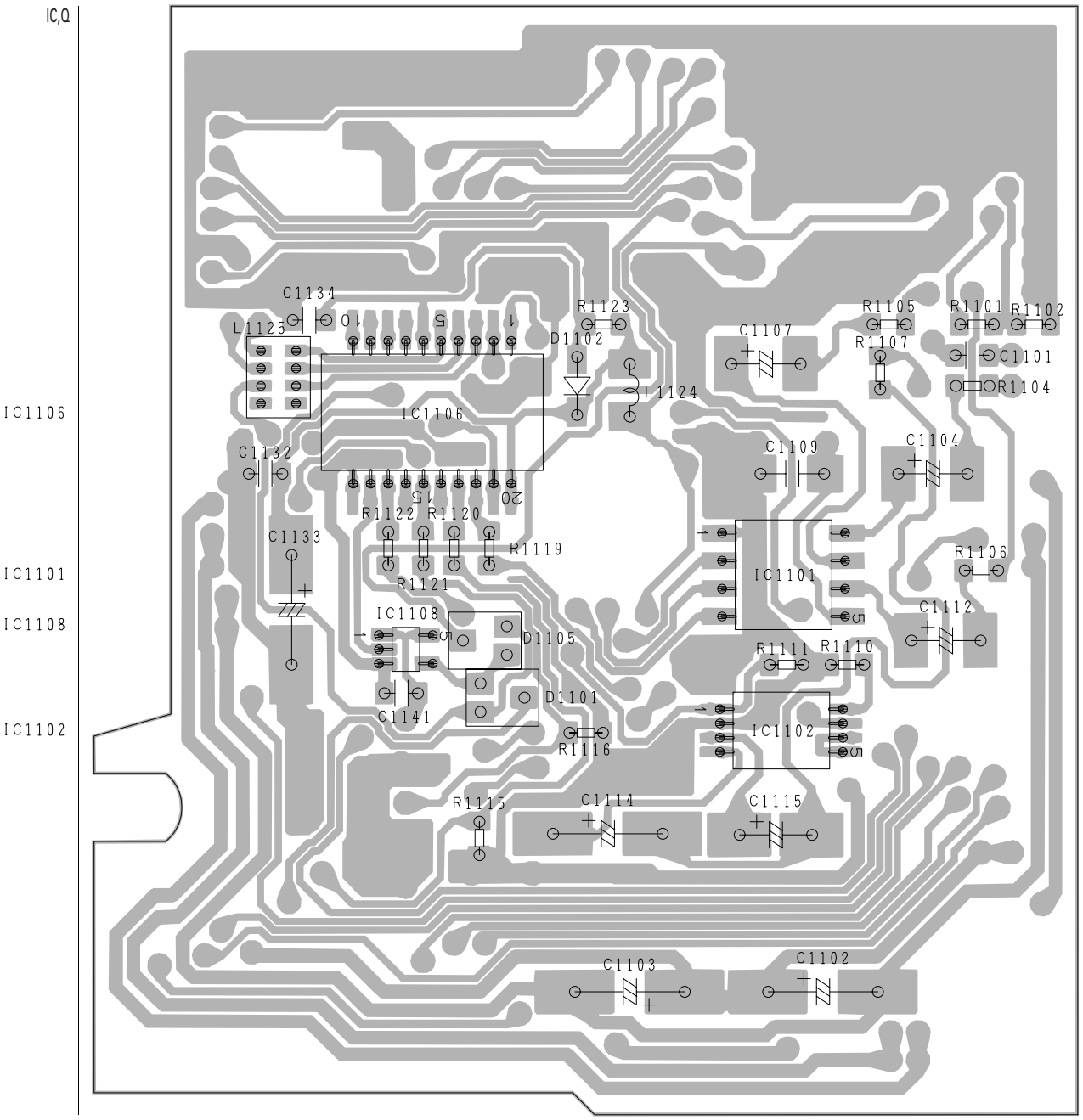
SIDE A



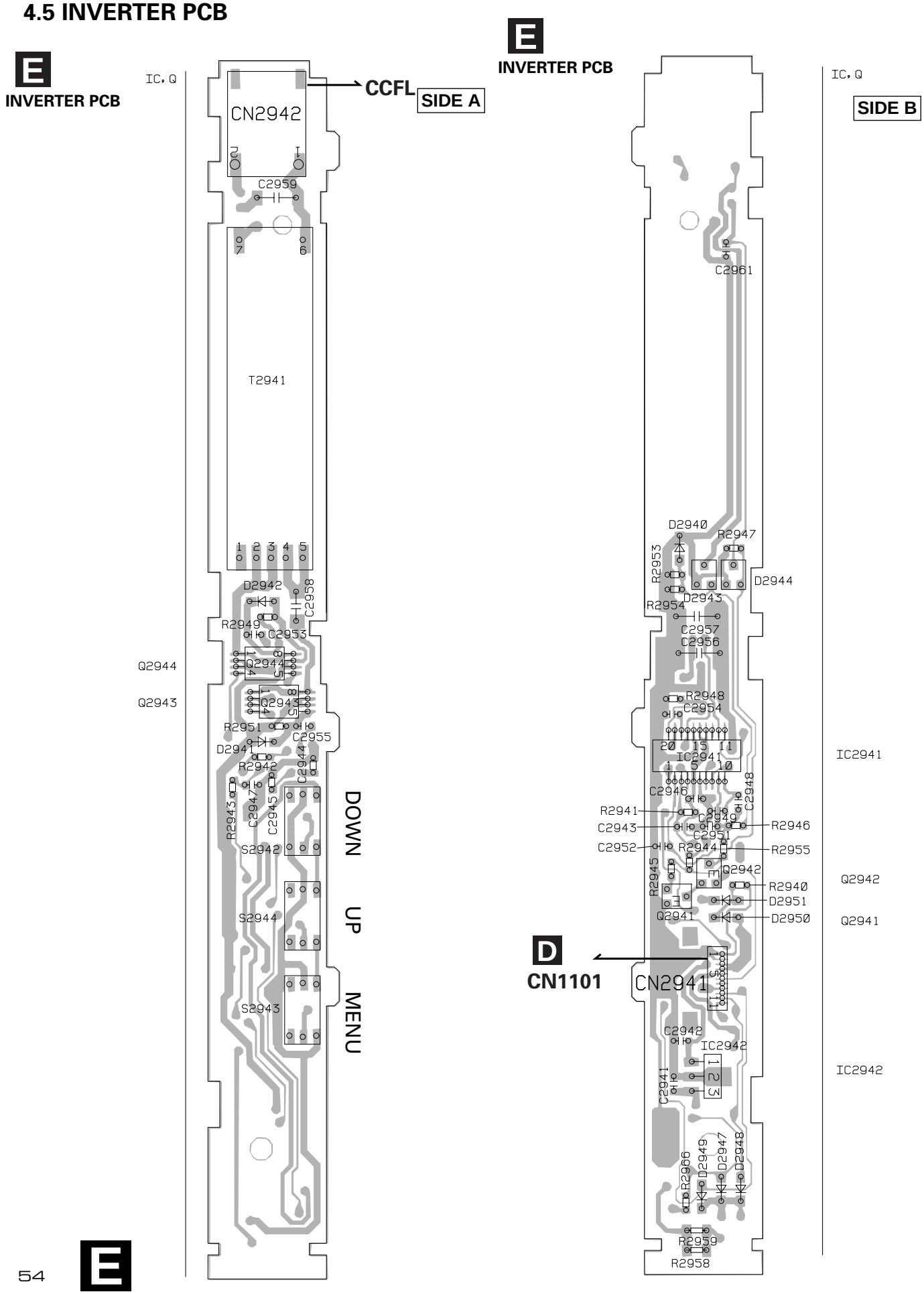
D

RELAY UNIT

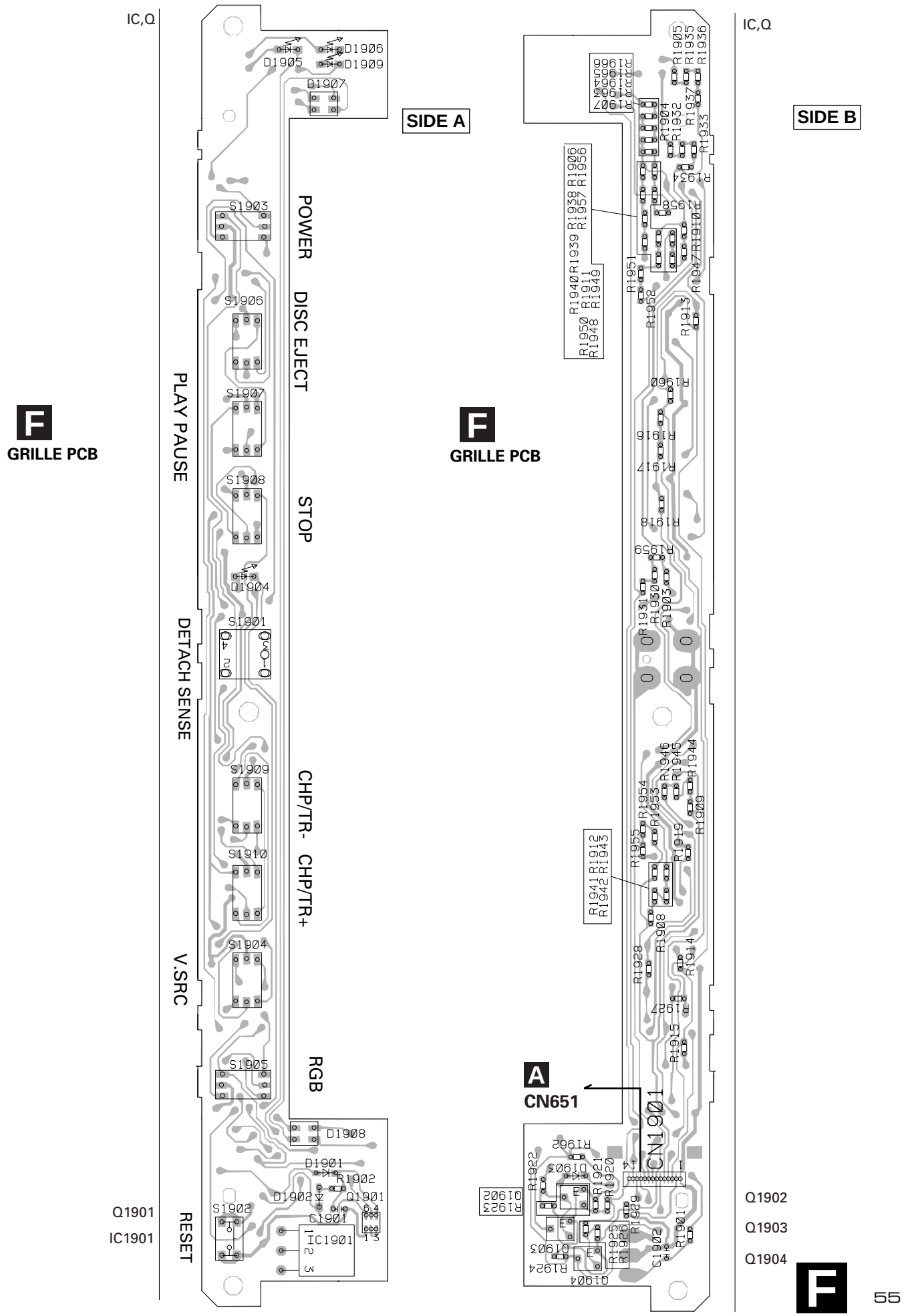
SIDE B



4.5 INVERTER PCB



4.6 GRILLE PCB

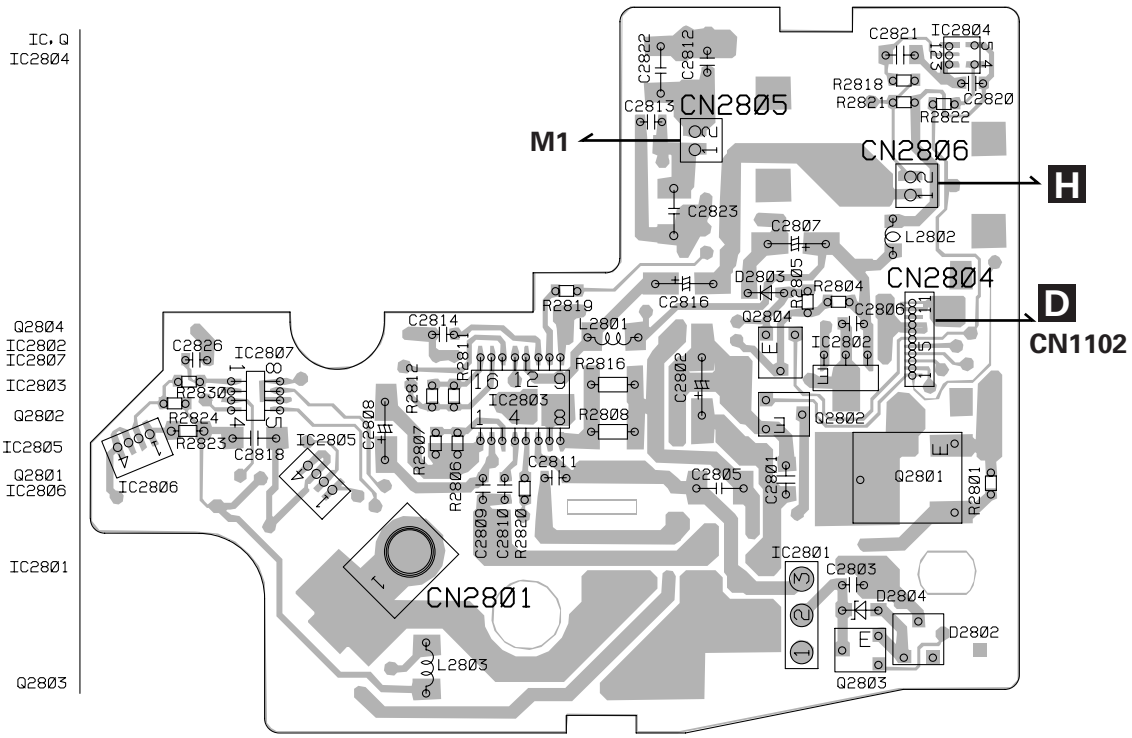


4.7 ENCODER PCB

G

ENCODER PCB

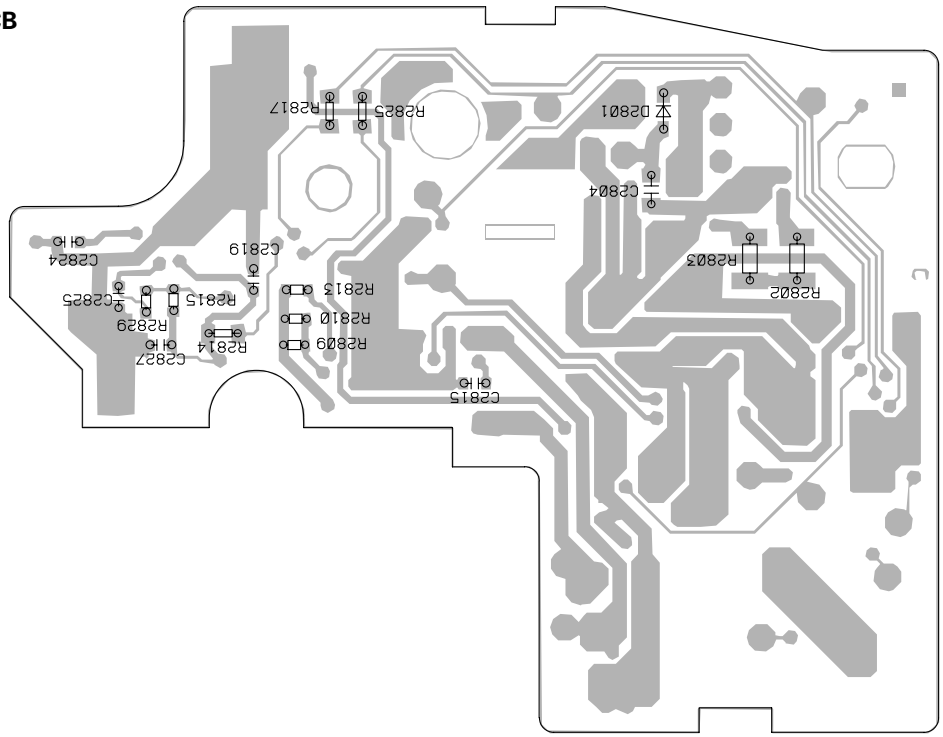
SIDE A



G

ENCODER PCB

SIDE B

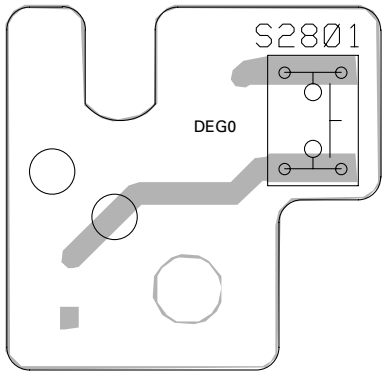


G

4.8 SW PCB

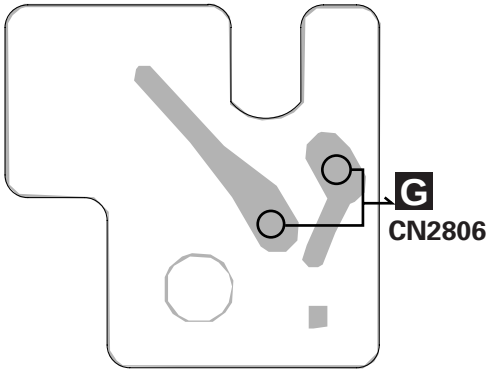
H
SW PCB

SIDE A



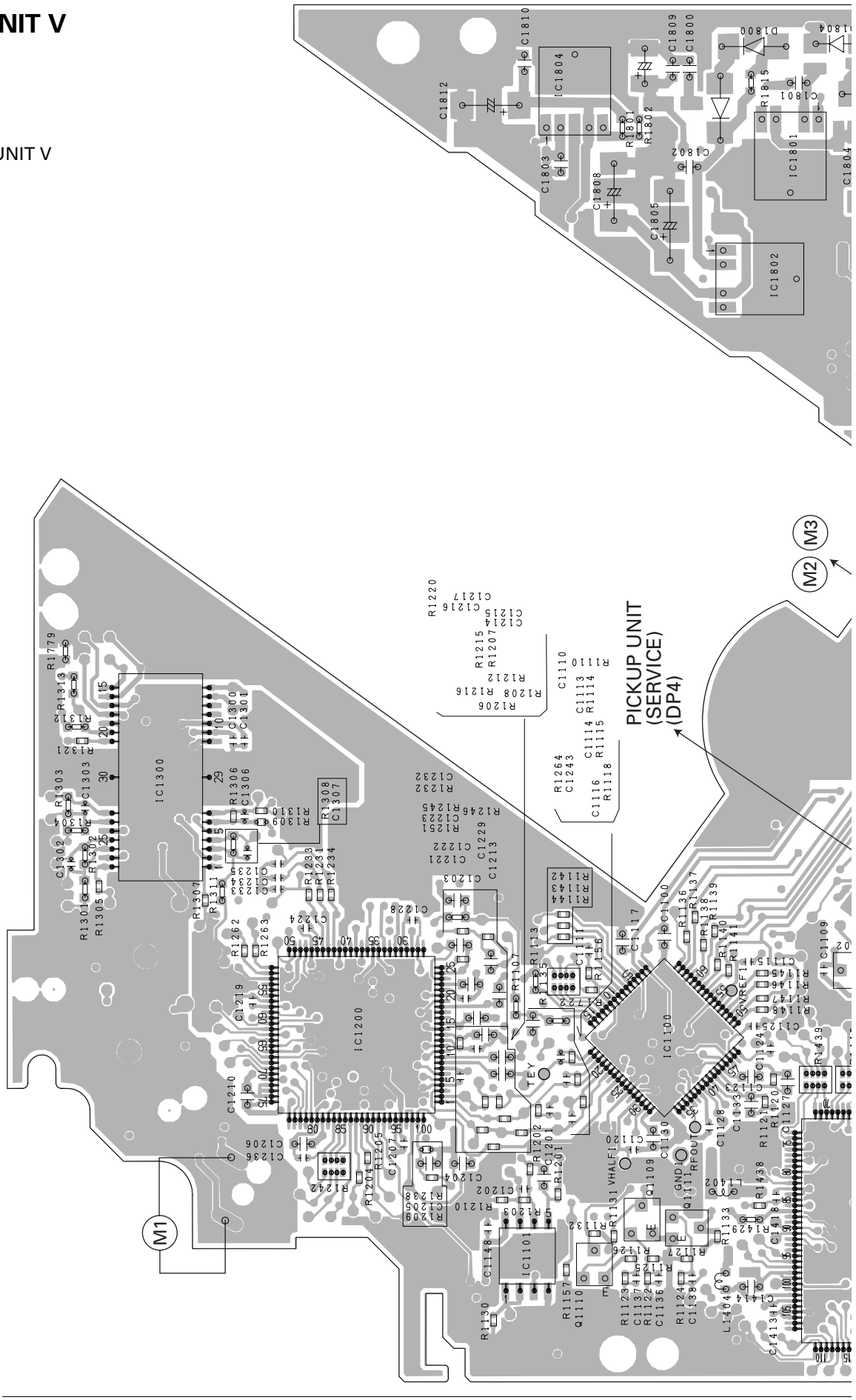
H
SW PCB

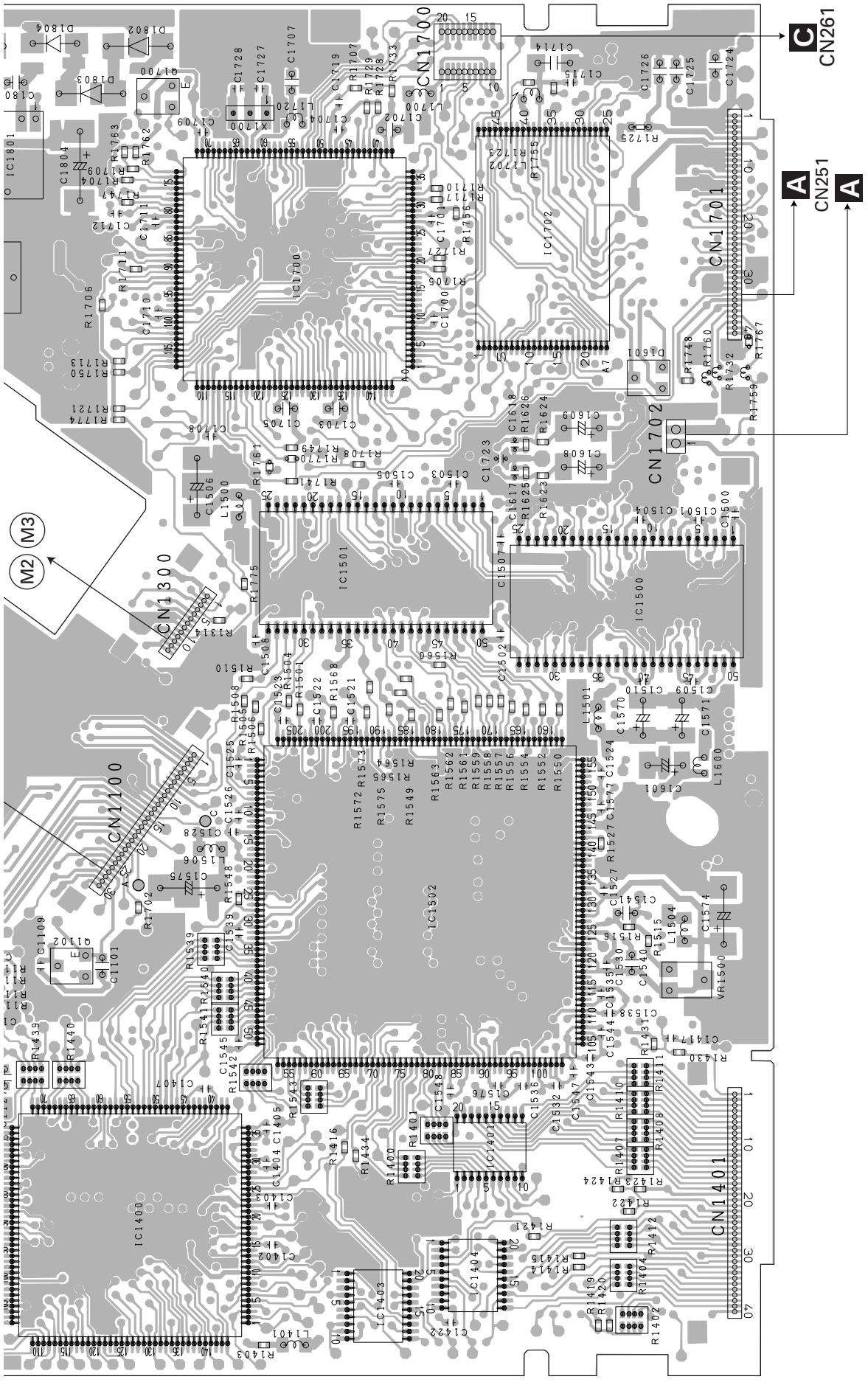
SIDE B



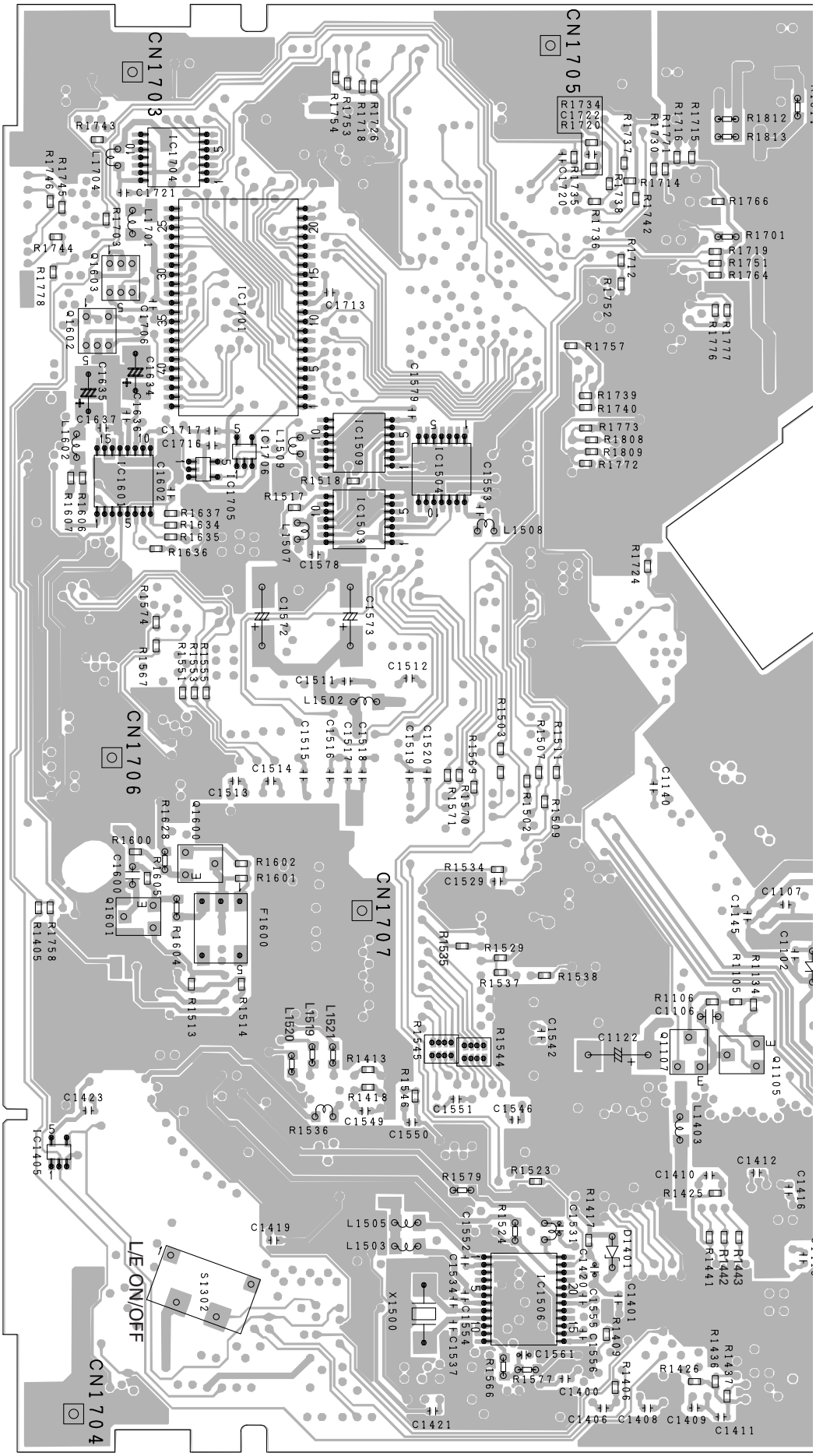
4.9 DVD CORE UNIT V

DVD CORE UNIT V

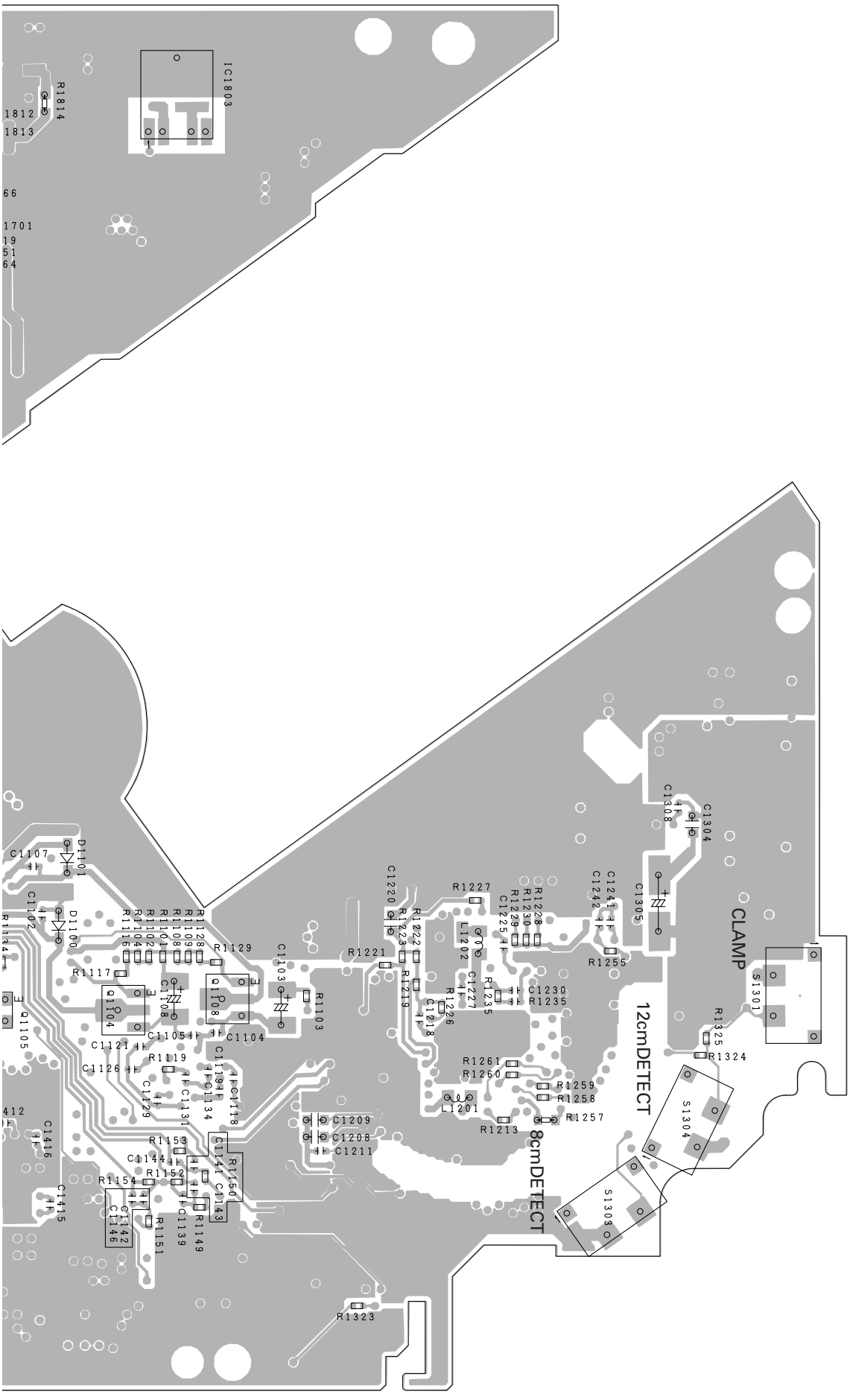



SIDE A
C
CN261
A
CN251
A
CN252
CN1300
CN1100
CN1702
CN1701
CN1401
M2
M3
IC1801
Q1102
IC1400
Q1700
IC1700
IC1501
IC1403
IC1502
IC1404
IC1401
IC1702
IC1500
ADJ
VR1500

DVD CORE UNIT V

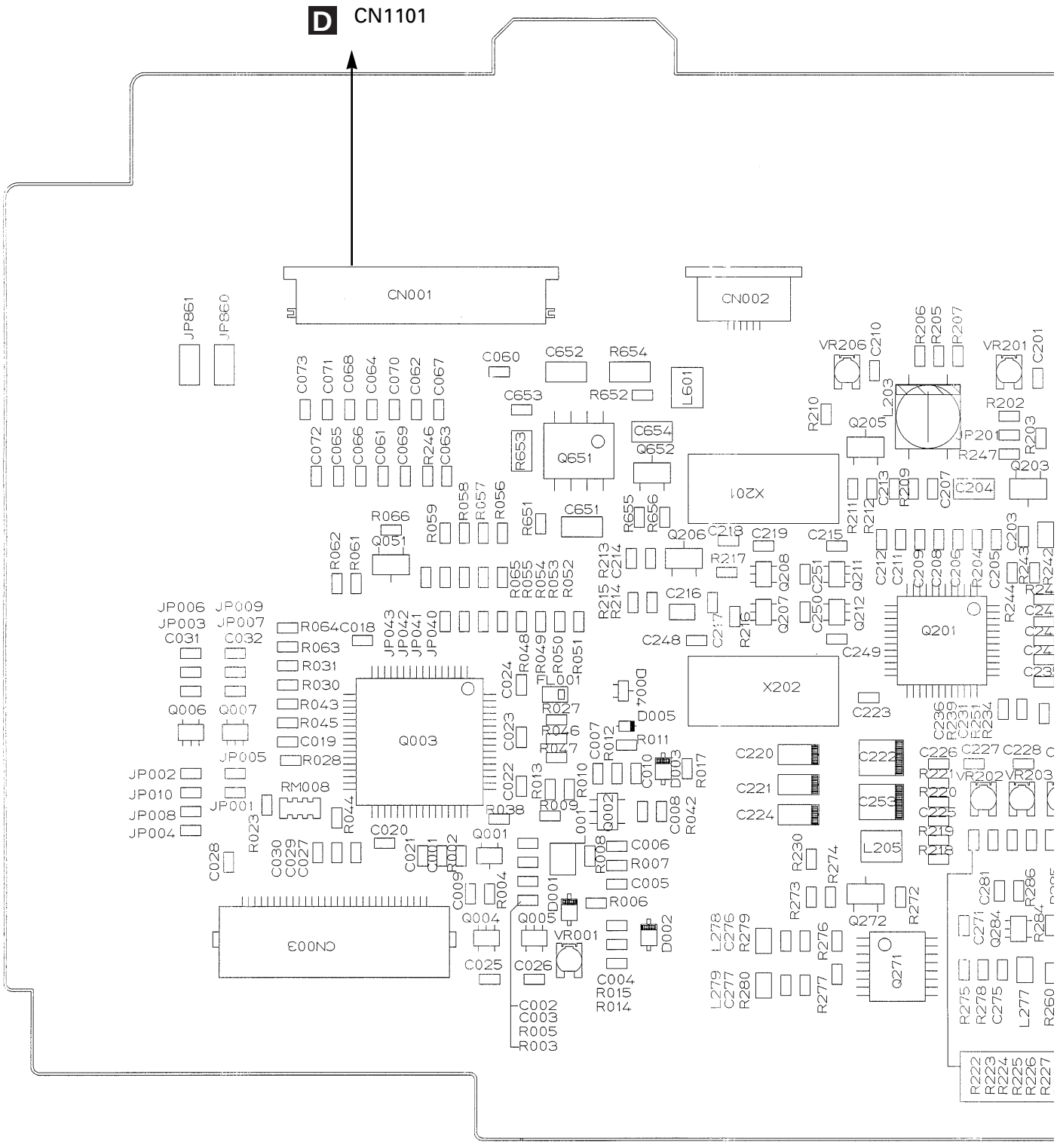


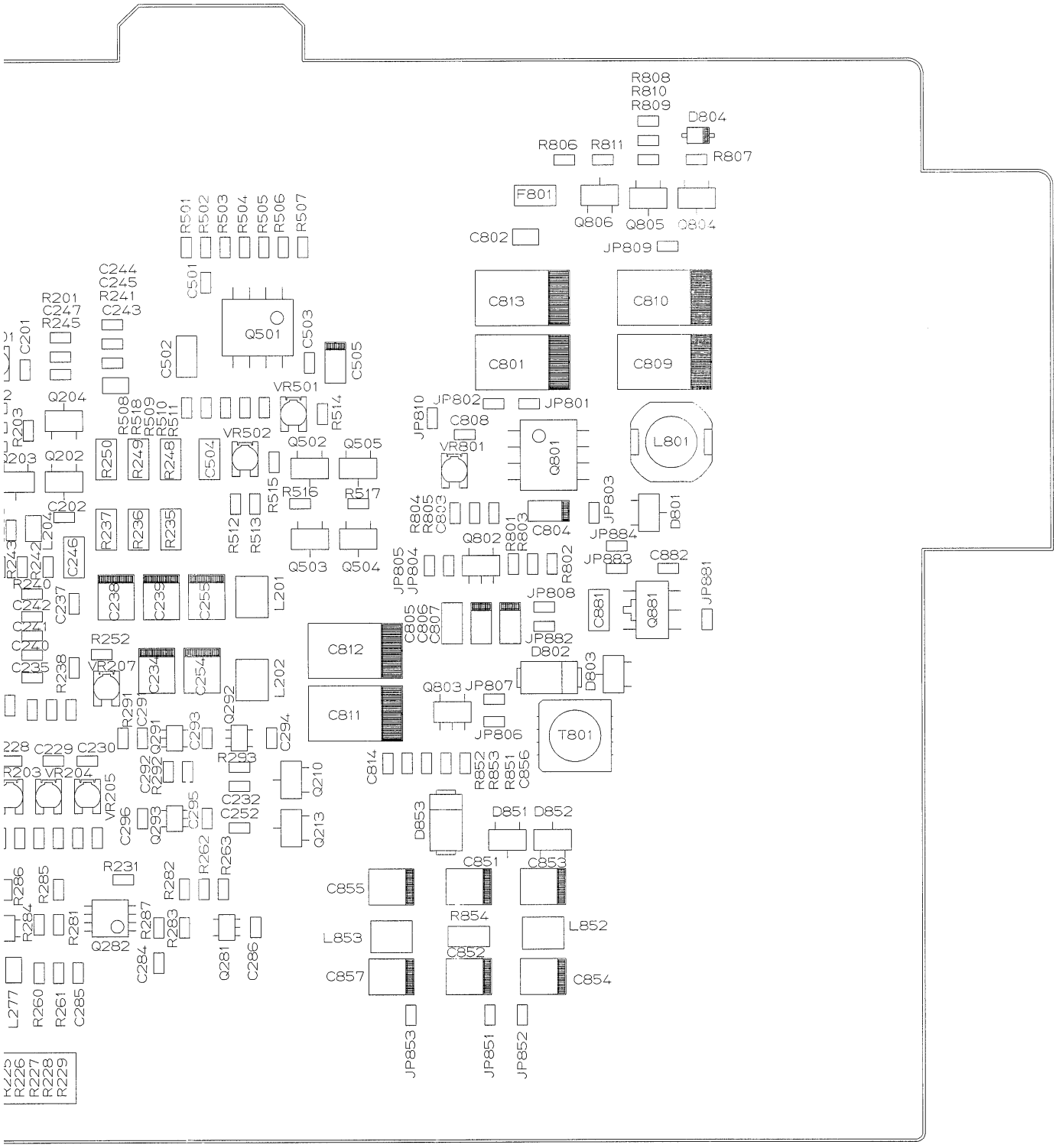
SIDE B


IC1803
R1814
1812
1813
66
1701
19
51
64
Q1104
Q1108
IC1803
IC,Q
C1107
D1101
D1100
C1102
R1117
C1103
C1104
C1105
C1126
C1129
C1134
C1131
C1118
C1141
C1143
C1144
C1142
C1146
C1139
C1415
C1416
R1119
R1129
R1103
R1221
R1227
C1220
C1225
L1202
C1227
C1230
R1235
C1218
R1261
R1260
R1259
R1258
R1257
R1213
C1209
C1208
C1211
R1323
C1308
C1304
C1305
C1241
C1242
R1255
CLAMP
S1301
R1325
R1324
12cmDETECT
S1304
8cmDETECT
S1303

4.10 VIDEO SCHEMATIC

J VIDEO SCHEMATIC




R808
R810
R809
D804
R806
R811
R807
F801
Q806
Q805
Q804
C802
JP809
C813
C810
C801
C809
R501
R502
R503
R504
R505
R506
R507
C501
C244
C245
R241
C243
R201
C247
R245
C201
Q501
C503
C502
C505
VR501
JP810
JP802
JP801
C808
Q204
R508
R518
R509
R510
R511
R514
R203
VR801
Q801
L801
VR502
Q502
Q505
R250
R249
R248
C504
R202
R515
R516
R517
R804
R805
C803
JP803
D801
R512
R513
C804
R801
R803
JP884
C202
R237
R236
R235
Q802
Q503
Q504
JP805
JP804
R802
JP883
C882
C246
C238
C239
C255
L201
JP808
C881
Q881
JP881
C805
C806
C807
C812
JP882
D802
R252
VR207
C234
C254
C811
Q803
JP807
D803
L202
Q292
R291
C291
C293
C294
JP806
T801
C814
R852
R853
R851
C856
C232
C252
Q210
Q213
D853
D851
D852
C851
C853
R231
C855
R854
L852
L853
C852
C857
C854
R282
R283
Q281
C286
Q282
C284
R287
R281
R285
R286
R284
L277
R260
R261
C285
JP853
JP851
JP852
R225
R226
R227
R228
R229

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J,RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

Control Unit
Consists of Control PCB Photo PCB Extension PCB

A B C

Unit Number : CWM7738(UC)
CWM7737(EW)
CWM7740(ES/RD)
CWM7739(ES/RC)

Unit Name : Control Unit

MISCELLANEOUS

=====Circuit Symbol and No.		===Part Name	Part No.
IC	13	IC	BP5250-1
IC	15	IC	BA00ASFP
IC	101	IC	NJM2903V
IC	103	IC	TC74VHCT08AFT
IC	251	IC	TC74VHCT08AFT
IC	252	IC	TC74VHC08FT
IC	301	IC	TC74HC123AF
IC	302	IC	TC7W34FU
IC	303	IC(EW,ES/RD,ES/RC)	BA7071F
IC	304	IC	NJM2267V
IC	305	IC	NJM2233BM
IC	306	IC	NJM2233BM
IC	307	IC	NJM2235V
IC	308	IC	NJM2267V
IC	309	IC	NJM2235V
IC	501	IC	NJM2068MD
IC	502	IC	BA3131FS
IC	602	IC	PE5230A
IC	603	IC	S-80734ANDYI
IC	604	IC	M62354GP
IC	605	IC	TC74VHCT08AFT
IC	701	IC	PE5285A
IC	801	IC	TA2050F
IC	802	IC	HA12187FP
IC	851	IC	TC7WT125FU
IC	1301	IC	NJM062V
Q	11	Transistor	2SC2412K
Q	12	Transistor	2SA1037K
Q	13	Transistor	2SA1036K
Q	14	Transistor	IMD2A
Q	15	Transistor	2SD1767
Q	16	Transistor	2SC2412K
Q	17	Transistor	2SA1797
Q	18	Transistor	2SJ529S
Q	19	Transistor	DTA114EK
Q	20	Transistor	2SD2396
Q	21	Transistor	IMD2A
Q	22	Transistor	2SD1760F5
Q	23	Transistor	IMD2A
Q	24	Transistor	2SD1760F5
Q	25	Transistor	2SA1797
Q	26	Transistor	2SA1036K
Q	27	Transistor	2SC2412K
Q	28	Transistor	DTC114EK
Q	29	Transistor	DTC114EK
Q	30	Transistor	2SA1037K
Q	31	Transistor	2SC2412K
Q	32	Transistor	DTC114EK
Q	33	Transistor	2SD2396
Q	34	Transistor	IMD2A
Q	35	Transistor	DTC124EK
Q	36	Transistor	IMD2A
Q	37	Transistor	2SC2412K
Q	39	Transistor	2SA1036K
Q	40	Transistor	DTC143EK
Q	201	Transistor	DTC124EK
Q	202	Transistor	2SC2412K
Q	203	Transistor	2SC2412K
Q	251	Transistor	2SA1036K
Q	252	Transistor	2SC2412K
Q	401	Transistor	2SC2412K
Q	403	Transistor	DTC124EK
Q	404	Transistor	IMX1
Q	405	Transistor	2SA1037K
Q	501	Transistor	IMD2A
Q	502	Transistor	FMG12
Q	503	Transistor	IMD2A
Q	504	Transistor	FMG12
Q	602	Transistor	DTC114EK
Q	603	Transistor	DTC114EK
Q	604	Transistor	DTA114EK
Q	651	Transistor	2SC2412K
Q	652	Transistor	2SC2412K
Q	653	Transistor	2SC2412K
Q	701	Transistor	DTA144EK
Q	851	Transistor	DTA123EU
Q	852	Transistor	DTC114EK
Q	853	Transistor	2SC2412K
D	12	Diode	F2J4S
D	13	Diode	UDZS8R2(B)
D	15	Diode	SC016-2
D	16	Diode	UDZS5R6(B)
D	17	Diode	MA152WK
D	18	Diode	UDZS5R6(B)
D	19	Diode	MA152WK
D	21	Diode	SC802-06
D	22	Diode	SC016-2
D	23	Diode	MA111
D	24	Diode	F2J4S
D	25	Diode	SC016-2

=====Circuit Symbol and No.		===Part Name	Part No.
D	26	Diode	UDZ9R1(B)
D	27	Diode	MA3091(L)
D	28	Diode	MA3056(H)
D	30	Diode	MA152WK
D	203	Diode	UDZ12(B)
D	204	Diode	UDZ12(B)
D	205	Diode	UDZ12(B)
D	206	Diode	UDZ12(B)
D	207	Diode	UDZ12(B)
D	208	Diode	UDZ12(B)
D	209	Diode	UDZ12(B)
D	210	Diode	UDZS8R2(B)
D	212	Diode	UDZ12(B)
D	214	Diode	UDZ12(B)
D	301	Diode	MA111
D	302	Diode	MA111
D	303	Diode	UDZ12(B)
D	304	Diode	UDZ12(B)
D	401	Diode	UDZS8R2(B)
D	403	Diode	MA111
D	404	Diode	UDZ7R5(B)
D	405	Diode	MA152WK
D	406	Diode	UDZ12(B)
D	407	Diode	UDZ12(B)
D	408	Diode	SC016-2
D	409	Diode	UDZ12(B)
D	410	Diode	UDZ12(B)
D	411	Diode	UDZ12(B)
D	412	Diode	UDZ12(B)
D	413	Diode	UDZ12(B)
D	414	Diode	MA111
D	501	Diode	MA152WK
D	601	Diode	MA152WK
D	602	Diode	MA152WK
D	603	Diode	MA111
D	604	Diode	UDZ3R3(B)
D	652	Diode	MA152WK
D	1301	LED	CL190PGCD
D	1302	Photo-Diode	AM-30-21
L	14	Coil	CTH1246
L	15	Coil	CTH1246
L	16	Coil	CTH1246
L	101	Inductor	CTF1305
L	102	Inductor	CTF1379
L	205	Inductor	CTF1305
L	206	Inductor	CTF1305
L	207	Inductor	CTF1305
L	208	Inductor	CTF1305
L	209	Inductor	CTF1305
L	210	Inductor	CTF1305
L	251	Inductor	CTF1305
L	252	Inductor	CTF1305
L	301	Inductor	CTF1379
L	302	Inductor	CTF1379
L	303	Inductor	CTF1379
L	304	Inductor	LCTB2R2K2125
L	305	Inductor(EW,ES/RD,ES/RC)	LCTB2R2K1608
L	306	Inductor	CTF1305
L	307	Inductor	CTF1305
L	308	Inductor	CTF1305
L	309	Inductor	CTF1305
L	310	Inductor	CTF1305
L	311	Inductor	CTF1305
L	401	Inductor	LCTB2R2K2125
L	402	Inductor	CTF1379

=====Circuit Symbol and No.		===Part Name	Part No.
L	403	Inductor	CTF1379
L	404	Inductor	CTF1379
L	405	Inductor	CTF1379
L	406	Inductor	CTF1379
L	501	Inductor	CTF1399
L	502	Inductor	CTF1399
L	503	Inductor	CTF1410
L	504	Inductor	CTF1410
L	505	Inductor	CTF1410
L	506	Inductor	CTF1410
L	507	Inductor	CTF1410
L	601	Inductor	CTF1379
L	602	Inductor	CTF1379
L	603	Inductor	CTF1379
L	604	Inductor	CTF1379
L	605	Inductor	CTF1379
L	606	Inductor	CTF1379
L	607	Inductor	CTF1420
L	608	Inductor	CTF1379
L	609	Inductor	CTF1379
L	610	Inductor	CTF1379
L	611	Inductor	CTF1379
L	612	Inductor	CTF1379
L	613	Inductor	CTF1379
L	614	Inductor	CTF1379
L	615	Inductor	CTF1379
L	616	Inductor	CTF1379
L	617	Inductor	CTF1379
L	618	Inductor	CTF1379
L	619	Inductor	CTF1379
L	620	Inductor	CTF1379
L	621	Inductor(EW,ES/RD,ES/RC)	CTF1379
L	622	Inductor	CTF1410
L	623	Inductor	CTF1410
L	624	Inductor	CTF1410
L	625	Inductor	CTF1399
L	626	Inductor	CTF1379
L	627	Inductor	CTF1379
L	628	Inductor	CTF1379
L	701	Inductor	CTF1379
L	702	Inductor	CTF1379
L	703	Inductor	CTF1379
L	704	Inductor	CTF1379
L	705	Inductor	CTF1379
L	706	Inductor	CTF1379
L	707	Inductor	CTF1379
L	708	Inductor	CTF1379
L	709	Inductor	CTF1379
L	710	Inductor	CTF1379
L	711	Inductor	CTF1420
L	712	Inductor	CTF1379
L	713	Inductor	CTF1379
L	714	Inductor	CTF1379
L	715	Inductor	CTF1399
L	716	Inductor	CTF1379
L	801	Inductor	CTF1399
L	803	Inductor	CTF1379
L	804	Inductor	CTF1379
L	851	Inductor	CTF1379
L	1301	Inductor	LCTB100K2125
X	601	Radiator 4.19MHz	CSS1436
X	701	Crystal Resonator 12.5829MHz	CSS1542
S	1301	Push Switch(OPEN/CLOSE)	CSG1126
FU	101	Fuse 3.15A	CEK1207
FU	102	Fuse 1A	CEK1191

Circuit Symbol and No.		Part Name	Part No.
FU	103	Fuse 1A	CEK1191
FU	104	Fuse 400mA	CEK1184
FU	105	Fuse 2A	CEK1190
FU	106	Fuse 3.15A	CEK1207
FU	201	Fuse 2A	CEK1190
FU	202	Fuse 2A	CEK1190
FU	203	Fuse 2A	CEK1190
FU	251	Fuse 2A	CEK1190
FU	252	Fuse 400mA	CEK1184
FU	253	Fuse 400mA	CEK1184
FU	401	Fuse 2A	CEK1190
FU	402	Fuse 2A	CEK1190
FU	403	Fuse 2A	CEK1190
FU	404	Fuse 2A	CEK1190
EF	301	EMI Filter	CCG1067
EF	302	EMI Filter	CCG1067
EF	303	EMI Filter	CCG1082
EF	304	EMI Filter	CCG1082
BZ	601	Buzzer	CPV1042
VR	1	Semi-fixed 470Ω(B)	CCP1388

RESISTORS

R	13		RS1/16S473J
R	14		RS1/16S102J
R	15		RS1/16S122J
R	16		RS1/16S473J
R	17		RS1/16S272J
R	18		RS1/16S103J
R	19		RS1/16S473J
R	20		RS1/16S473J
R	21		RS1/16S472J
R	22		RS1/16S180J
R	23		RS1/8S391J
R	25		RS1/16S3002D
R	26		RS1/16S1002D
R	27		RS1/16S182J
R	28		RS1/16S472J
R	29		RS1/16S222J
R	31		RS1/16S472J
R	33		RS1/16S822J
R	34		RS1/16S472J
R	35		RS1/16S473J
R	36		RS1/10S472J
R	37		RAB4C470J
R	38		RAB4C470J
R	40		RS1/16S470J
R	42		RS1/16S470J
R	43		RS1/16S102J
R	44		RS1/16S333J
R	45		RS1/16S104J
R	46		RS1/16S180J
R	47		RS1/16S180J
R	48		RS1/16S180J
R	49		RS1/16S180J
R	50		RS1/16S180J
R	51		RS1/16S332J
R	52		RS1/16S473J
R	53		RS1/16S1001D
R	54		RS1/16S3301D
R	55		RS1/16S2001F
R	56		RS1/16S4700D
R	57		RS1/16S153J
R	58		RS1/16S473J
R	59		RS1/16S473J
R	60		RS1/16S473J
R	61		RS1/16S0R0J
R	62		RS1/16S681J
R	65		RS1/16S473J
R	66		RS1/16S102J
R	101		RS1/16S102J
R	102		RS1/16S102J
R	103		RAB4C102J
R	104		RAB4C102J
R	105		RAB4C102J
R	106		RAB4C102J
R	107		RS1/16S102J
R	108		RAB4C221J
R	109		RS1/16S101J
R	110		RS1/16S102J
R	111		RS1/16S101J
R	112		RS1/16S103J
R	113		RS1/16S103J
R	114		RS1/16S392J
R	115		RS1/16S912J
R	116		RS1/16S2003F
R	117		RS1/16S153J
R	118		RS1/16S153J
R	119		RS1/16S102J
R	120		RS1/16S102J
R	121		RS1/16S0R0J
R	206		RS1/16S750J
R	207		RS1/16S750J
R	208		RS1/16S750J
R	209		RS1/16S750J
R	210		RS1/16S0R0J
R	212		RS1/16S102J
R	213		RS1/16S392J
R	214		RS1/16S102J
R	215		RS1/16S473J
R	216		RS1/16S103J
R	217		RS1/16S473J
R	218		RS1/16S223J
R	219		RS1/16S223J
R	220		RS1/16S223J
R	251		RS1/16S102J
R	252		RAB4C102J
R	253		RS1/16S102J
R	254		RS1/16S102J
R	255		RS1/16S0R0J
R	256		RAB4C102J
R	257		RS1/16S102J
R	258		RS1/16S102J
R	259		RS1/16S271J
R	260		RS1/16S472J
R	261		RS1/16S273J
R	262		RS1/16S473J
R	263		RS1/16S0R0J
R	264		RS1/16S0R0J
R	265		RS1/16S221J
R	301		RS1/16S822J
R	302		RS1/16S822J
R	303		RS1/16S471J
R	304		RS1/16S471J
R	305		RS1/16S471J
R	306	(EW,ES/RD,ES/RC)	RS1/16S561J
R	307	(EW,ES/RD,ES/RC)	RS1/16S102J
R	308	(EW,ES/RD,ES/RC)	RS1/16S1003D
R	309		RS1/16S750J
R	310		RS1/16S105J
R	311		RS1/16S105J
R	312		RS1/16S101J
R	313		RS1/16S101J

Circuit Symbol and No.		Part Name	Part No.
R	314		RS1/16S682J
R	315		RS1/16S682J
R	317		RS1/16S101J
R	318		RS1/16S101J
R	319		RS1/16S101J
R	320		RS1/16S105J
R	321		RS1/16S105J
R	322		RS1/16S105J
R	323		RS1/16S105J
R	324		RS1/16S105J
R	325		RS1/16S102J
R	326		RS1/16S102J
R	327		RS1/16S101J
R	328		RS1/16S105J
R	329		RS1/16S750J
R	330		RS1/16S750J
R	331		RS1/16S105J
R	332		RS1/16S105J
R	333		RS1/16S102J
R	334		RS1/16S102J
R	401		RS1/16S473J
R	402		RS1/16S103J
R	403		RS1/16S473J
R	406		RS1/16S473J
R	407		RS1/16S473J
R	408		RS1/16S473J
R	409		RS1/10S0R0J
R	410		RS1/10S103J
R	411		RS1/16S102J
R	412		RS1/10S103J
R	413		RS1/10S473J
R	414		RS1/16S0R0J
R	415		RS1/10S473J
R	416		RS1/16S473J
R	418		RS1/16S473J
R	419		RS1/10S103J
R	420		RS1/16S750J
R	421		RS1/16S750J
R	423		RAB4C102J
R	424		RS1/16S473J
R	425		RS1/16S122J
R	426		RS1/16S122J
R	427		RS1/16S122J
R	501		RS1/16S473J
R	503		RS1/16S222J
R	504		RS1/16S222J
R	505		RS1/16S473J
R	507		RS1/16S472J
R	508		RS1/16S472J
R	509		RS1/16S472J
R	510		RS1/16S472J
R	511		RS1/16S104J
R	512		RS1/16S104J
R	513		RS1/16S821J
R	514		RS1/16S821J
R	515		RS1/16S473J
R	516		RS1/16S473J
R	517		RS1/16S473J
R	518		RS1/16S473J
R	519		RS1/16S472J
R	520		RS1/16S472J
R	521		RS1/16S223J
R	522		RS1/16S223J
R	523		RS1/16S473J
R	524		RS1/16S821J

Circuit Symbol and No.		Part Name	Part No.
R	525		RS1/16S821J
R	526		RS1/16S223J
R	527		RS1/16S223J
R	528		RS1/16S472J
R	529		RS1/16S472J
R	601		RS1/16S102J
R	602		RS1/16S102J
R	603		RS1/16S473J
R	607	(UC)	RS1/16S223J
R	607	(EW)	RS1/16S473J
R	607	(ES/RD,ES/RC)	RS1/16S113J
R	608		RS1/16S104J
R	609	(UC)	RS1/16S223J
R	609	(ES/RD,ES/RC)	RS1/16S333J
R	610		RAB4C473J
R	611		RS1/16S473J
R	612		RS1/16S473J
R	613		RS1/16S104J
R	614		RS1/16S104J
R	615		RS1/16S104J
R	616		RAB4C102J
R	617		RS1/16S0R0J
R	618		RS1/16S102J
R	619		RS1/16S473J
R	620		RAB4C473J
R	622		RS1/16S102J
R	623	(UC)	RS1/16S103J
R	624		RS1/16S102J
R	626		RS1/16S102J
R	627	(UC)	RS1/16S473J
R	629		RS1/16S102J
R	630		RS1/16S224J
R	631		RS1/16S473J
R	632		RS1/16S104J
R	633		RS1/16S473J
R	634		RS1/16S473J
R	636		RS1/16S471J
R	637		RAB4C102J
R	651		RS1/16S102J
R	652		RS1/16S102J
R	653		RS1/16S102J
R	654	(EW)	RS1/16S102J
R	656		RS1/16S104J
R	657		RS1/16S104J
R	658		RS1/16S104J
R	659		RS1/16S104J
R	702		RS1/16S104J
R	703		RS1/16S104J
R	704		RAB4C473J
R	705		RS1/16S102J
R	708		RS1/16S471J
R	709		RS1/16S473J
R	710		RS1/16S473J
R	711		RS1/16S102J
R	712		RS1/16S473J
R	713	(UC)	RS1/16S333J
R	713	(EW)	RS1/16S223J
R	713	(ES/RD)	RS1/16S473J
R	713	(ES/RC)	RS1/16S113J
R	714	(UC)	RS1/16S113J
R	714	(EW)	RS1/16S223J
R	714	(ES/RC)	RS1/16S333J
R	715		RS1/16S473J
R	717		RS1/16S473J
R	719		RS1/16S102J

Circuit Symbol and No.		Part Name	Part No.
R	720		RS1/16S473J
R	721		RS1/16S473J
R	722		RS1/16S473J
R	723		RS1/16S473J
R	724		RS1/16S473J
R	725		RS1/16S473J
R	801		RS1/16S473J
R	802		RS1/16S473J
R	803		RS1/16S102J
R	804		RS1/16S102J
R	805		RS1/16S102J
R	806		RS1/16S102J
R	807		RS1/16S101J
R	808		RS1/16S101J
R	809		RS1/16S223J
R	810		RS1/16S223J
R	811		RS1/16S181J
R	812		RS1/16S181J
R	851		RS1/16S621J
R	853		RS1/16S473J
R	854		RS1/16S361J
R	1301		RS1/4S511J
R	1302		RS1/4S511J
R	1303		RS1/16S685J
R	1304		RS1/16S105J
R	1305		RS1/16S103J
R	1306		RS1/16S393J

CAPACITORS

Circuit Symbol and No.		Part Name	Part No.
C	16		CKSRYB102K50
C	17		CEV220M16
C	18	0.1F/5.5V	CCL1023
C	19		CKSRYB472K50
C	20	100µF/16V	CCH1319
C	21	100µF/16V	CCH1319
C	22	100µF/16V	CCH1319
C	23	100µF/16V	CCH1319
C	24	100µF/10V	CCH1332
C	25		CKSRYB104K16
C	27		CKSRYB472K50
C	28		CKSRYB472K50
C	29	47µF/16V	CCH1413
C	30		CEV101M16
C	31		CEV101M16
C	32		CEV101M16
C	33		CEV101M16
C	34		CEV101M16
C	35		CEV101M16
C	36		CKSRYB472K50
C	37		CKSRYB472K50
C	38		CEV101M16
C	39		CKSQYB474K16
C	40		CEV101M16
C	41	47µF/16V	CCH1413
C	42		CKSRYB472K50
C	43		CKSRYB472K50
C	44		CKSRYB472K50
C	45		CEV101M16
C	46		CEVR33M50
C	47		CEV220M16
C	48	100µF/10V	CCH1332
C	49		CEV220M16
C	50		CKSRYB103K50
C	51		CKSYB106K6R3
C	52	680µF/16V	CCH1415
C	53		CKSRYB103K50
C	54		CKSRYB103K50
C	55	100µF/16V	CCH1319
C	56	100µF/16V	CCH1319
C	57	100µF/16V	CCH1319
C	101		CKSRYB102K50
C	102		CKSRYB102K50
C	103		CEV101M16
C	104		CEV470M6R3
C	105		CKSRYB102K50
C	106		CEV4R7M25
C	107		CEV470M16
C	108		CKSRYB102K50
C	109		CEV101M16
C	110		CEV101M16
C	111		CEV101M16
C	112		CEV101M16
C	114		CKSRYB102K50
C	115		CKSRYB105K6R3
C	116		CSZS330M6R3
C	117		CFHSQ562J16
C	118		CKSRYB102K50
C	119		CKSRYB103K50
C	120	470µF/16V	CCH1183
C	251		CKSRYB102K50
C	252		CEV101M16
C	253		CKSRYB103K50
C	254		CKSRYB103K50
C	255		CEV101M16
C	256		CKSRYB102K50
C	257		CKSRYB102K50
C	258		CEV101M16
C	301		CKSYB106K6R3
C	302		CKSRYB102K50
C	303		CCSRCH471J50
C	304		CCSRCH471J50
C	305		CKSRYB103K50
C	306		CKSRYB103K50
C	309	(EW,ES/RD,ES/RC)	CCSRCH221J50
C	310	(EW,ES/RD,ES/RC)	CKSRYB104K16
C	311	(EW,ES/RD,ES/RC)	CKSRYB103K50
C	312	(EW,ES/RD,ES/RC)	CKSRYB103K50
C	313		CEV221M4
C	314		CEV221M4
C	315		CKSQYB225K10
C	316		CKSQYB225K10
C	317		CKSRYB104K16
C	318		CCSRCH220J50
C	319		CCSRCH220J50
C	320		CKSRYB105K6R3
C	321		CKSRYB105K6R3
C	322		CKSRYB104K16
C	323		CKSRYB104K16
C	324		CKSYB106K6R3
C	325		CCSRCH220J50
C	326	47µF/16V	CCH1413
C	327		CKSRYB103K50
C	328		CKSRYB104K16
C	329		CKSRYB104K16
C	330		CCSRCH220J50
C	331		CCSRCH220J50
C	332		CKSRYB104K16
C	333		CKSRYB105K6R3
C	334		CKSRYB105K6R3

Circuit Symbol and No.		Part Name	Part No.
C	335		CCSRCH470J50
C	336		CCSRCH470J50
C	337		CKSRYB105K6R3
C	338		CKSRYB105K6R3
C	339		CCSRCH220J50
C	340		CEV220M6R3
C	341		CEV101M6R3
C	342		CEV101M6R3
C	343		CKSRYB104K16
C	344	47µF/16V	CCH1413
C	345		CEV101M6R3
C	346		CKSRYB103K50
C	347		CEV101M6R3
C	348		CEV101M6R3
C	349		CEV220M6R3
C	351		CKSRYB105K6R3
C	352		CKSRYB105K6R3
C	353		CKSRYB105K6R3
C	401		CKSYB105K25
C	402		CKSRYB104K16
C	404	3300µF/16V	CCH1018
C	405		CKSRYB103K50
C	407		CEV100M16
C	408		CKSQYB225K10
C	501		CEV100M16
C	502		CEV100M16
C	503		CCSRCH220J50
C	504		CCSRCH220J50
C	505		CEV4R7M25
C	506		CEV4R7M25
C	507		CKSRYB104K16
C	508		CEV4R7M25
C	509		CKSRYB221K50
C	510		CKSRYB221K50
C	511		CKSRYB103K50
C	512		CEV101M16
C	513		CEV220M6R3
C	514		CEV101M16
C	515		CEV4R7M25
C	516		CEV4R7M25
C	517		CCSRCH220J50
C	518		CCSRCH220J50
C	519		CCSRCH221J50
C	520		CCSRCH221J50
C	601		CKSRYB103K50
C	602		CKSRYB104K16
C	603		CKSQYB104K50
C	604		CEV4R7M25
C	605		CCSRCH101J50
C	606		CKSRYB105K6R3
C	607		CKSRYB103K50
C	608		CKSYB106K6R3
C	609		CKSRYB102K50
C	610		CKSRYB102K50
C	611		CKSRYB102K50
C	612		CKSRYB103K50
C	616		CKSRYB222K50
C	701		CKSRYB103K50
C	702		CKSRYB103K50
C	703		CCSRCH101J50
C	704		CKSYB106K6R3
C	705		CKSRYB105K6R3
C	706		CCSRCH180J50
C	707		CCSRCH180J50
C	708		CKSRYB103K50

Circuit Symbol and No.		Part Name	Part No.
C	709		CCSRCH101J50
C	710		CKSRYB103K50
C	801		CEVNP100M10
C	802		CEVNP100M10
C	803		CKSRYB104K16
C	804		CEV100M16
C	805		CEV100M16
C	806		CKSQYB105K16
C	807		CKSQYB105K16
C	808		CKSQYB105K16
C	809		CKSQYB105K16
C	810		CKSRYB104K16
C	813		CKSRYB104K16
C	851		CCSRCH150J50
C	853		CKSRYB104K16
C	854		CEV100M16
C	1301		CKSRYB104K16
C	1302		CKSRYB104K16
C	1303		CKSRYB104K25
C	1304		CKSRYB104K16
C	1305		CKSRYB473K50

D Unit Number : CWM7752
Unit Name : Relay Unit

MISCELLANEOUS

IC	1101	IC	BA7623F
IC	1102	IC	NJM2267V
IC	1103	IC	TC7SH32FU
IC	1104	IC	TC7S08FU
IC	1105	IC	BA7603F
IC	1106	IC	PD5582A
IC	1107	IC	TC74HC123AF
IC	1108	IC	TC7S08FU
Q	1101	Transistor	DTA114EU
Q	1102	Transistor	2SC4081
D	1101	Diode	MA142WK
D	1102	Diode	MA111
D	1103	Diode	MA111
D	1104	Diode	MA111
D	1105	Diode	MA142WK
D	1106	Diode	MA111
D	1107	Diode	UDZ4R3(B)
L	1101	Inductor-Array	CTF1421
L	1105	Inductor-Array	CTF1421
L	1108	Inductor	CTF1379
L	1109	Inductor	CTF1379
L	1110	Inductor	CTF1379
L	1111	Inductor	CTF1379
L	1112	Inductor	CTF1379
L	1118	Inductor	LCTB2R2K2125
L	1119	Inductor	LCTB2R2K2125
L	1120	Inductor	LCTB2R2K1608
L	1121	Inductor	LCTB2R2K1608
L	1122	Inductor	LCTB2R2K1608
L	1123	Inductor	LCTB2R2K2125
L	1124	Inductor	LCTA101J2520
L	1125	Inductor-Array	CTF1421
EF	1101	EMI Filter	CCG1067
EF	1102	EMI Filter	CCG1067

RESISTORS

R	1102		RS1/16S0R0J
R	1103		RS1/16S0R0J
R	1104		RS1/16S0R0J
R	1105		RS1/16S0R0J
R	1106		RS1/16S0R0J

=====Circuit Symbol and No.	===Part Name	Part No.
R 1107		RS1/16S750J
R 1110		RS1/16S105J
R 1111		RS1/16S105J
R 1112		RS1/16S471J
R 1113		RS1/16S101J
R 1114		RS1/16S332J
R 1115		RS1/16S152J
R 1116		RS1/16S152J
R 1117		RS1/16S152J
R 1118		RS1/16S681J
R 1119		RS1/16S681J
R 1120		RS1/16S392J
R 1121		RS1/16S392J
R 1122		RS1/16S392J
R 1123		RS1/16S473J
R 1124		RS1/16S105J
R 1125		RS1/16S102J
R 1126		RS1/16S512J
R 1127		RS1/16S152J
R 1128		RS1/16S0R0J
R 1129		RS1/16S0R0J
R 1130		RS1/16S222J
R 1134		RS1/16S151J
R 1135		RS1/16S0R0J

CAPACITORS

C 1101		CKSRYB104K16
C 1102		CEV470M16
C 1103		CEV470M16
C 1104		CSZSR101M6R3
C 1107		CSZSR101M6R3
C 1108		CKSRYB103K50
C 1109		CKSYB106K6R3
C 1112		CSZSR101M6R3
C 1114		CEV101M16
C 1115		CEV220M6R3
C 1116		CKSQYB225K10
C 1117		CKSRYB103K50
C 1118		CKSYB106K6R3
C 1121		CKSRYB105K6R3
C 1123		CKSRYB105K6R3
C 1124		CKSRYB104K16
C 1125		CKSRYB104K16
C 1126		CKSRYB104K16
C 1127		CKSYB106K6R3
C 1128		CKSRYB103K50
C 1129		CKSRYB105K6R3
C 1130		CKSRYB105K6R3
C 1131		CKSRYB105K6R3
C 1132		CKSRYB103K50
C 1133		CEV101M16
C 1134		CKSRYB103K50
C 1135		CCSRCH471J50
C 1136		CCSRCH471J50
C 1137		CKSRYB105K6R3
C 1138		CKSRYB105K6R3
C 1139		CCSRCH101J50
C 1140		CKSRYB105K6R3
C 1141		CKSRYB104K16

=====Circuit Symbol and No.	===Part Name	Part No.

Keyboard Unit

Consists of
- Inverter PCB
- Grille PCB

E F

Unit Number : CWM7744(UC,ES/RD,ES/RC)
CWM7745(EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1901	IC	TSOP1840SB1
IC 2941	IC	OZ960IS
IC 2942	IC	TA78L05F
Q 1901	Transistor	UMD2N
Q 1902	Transistor(EW)	2SC2412K
Q 1903	Transistor(EW)	2SC2412K
Q 1904	Transistor(EW)	2SC2412K
Q 2941	Transistor	2SC4081
Q 2942	Transistor	DTA144EE
Q 2943	FET	SI6544DQ
Q 2944	FET	SI6544DQ
D 1901	Diode	MA111
D 1902	Diode	MA111
D 1903	Diode	MA111
D 1904	LED	CL170SRCD
D 1905	LED	CL170DCD
D 1906	LED	CL170PGCD
D 1907	LED	CL155DPGD
D 1908	LED	CL155DPGD
D 1909	LED	CL170PGCD
D 2940	Diode	UDZ6R8(B)
D 2941	Diode	HZU6R2(B3)
D 2942	Diode	HZU6R2(B3)
D 2943	Diode	MA143
D 2944	Diode	MA143
D 2950	Diode	UDZ5R6(B)
D 2951	Diode	1SS355
T 2941	Transformer	CTT1102
S 1901	Spring Switch(Detach sense)	CSN1046
S 1902	Push Switch(Reset)	CSG1111
S 1903	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1903	Push Switch(EW)	CSG1113
S 1904	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1904	Push Switch(EW)	CSG1113
S 1905	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1905	Push Switch(EW)	CSG1113
S 1906	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1906	Push Switch(EW)	CSG1113
S 1907	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1907	Push Switch(EW)	CSG1113
S 1908	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1908	Push Switch(EW)	CSG1113
S 1909	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1909	Push Switch(EW)	CSG1113
S 1910	Push Switch(UC,ES/RC,ES/RD)	CSG1112
S 1910	Push Switch(EW)	CSG1113
S 2942	Push Switch	CSG1112
S 2943	Push Switch	CSG1112
S 2944	Push Switch	CSG1112

RESISTORS

R 1901		RS1/16S100J
R 1902		RS1/16S472J
R 1903		RS1/16S271J
R 1904		RS1/16S181J
R 1905		RS1/16S181J

=====Circuit Symbol and No.		===Part Name	Part No.
R	1906	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1906	(EW)	RS1/16S151J
R	1907	(EW)	RS1/16S301J
R	1908	(EW)	RS1/16S131J
R	1909		RS1/16S181J
R	1910	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1910	(EW)	RS1/16S151J
R	1911	(EW)	RS1/16S131J
R	1912	(EW)	RS1/16S181J
R	1914		RS1/16S123J
R	1915		RS1/16S473J
R	1916		RS1/16S123J
R	1917		RS1/16S183J
R	1918		RS1/16S393J
R	1919		RS1/16S124J
R	1920	(EW)	RS1/16S103J
R	1921	(EW)	RS1/16S153J
R	1922	(EW)	RS1/16S472J
R	1923	(EW)	RS1/16S153J
R	1924	(UC,ES/RD,ES/RC)	RS1/16S0R0J
R	1925	(EW)	RS1/16S472J
R	1926	(EW)	RS1/16S153J
R	1930		RS1/16S271J
R	1931		RS1/16S271J
R	1932		RS1/16S181J
R	1933		RS1/16S181J
R	1934		RS1/16S181J
R	1935		RS1/16S181J
R	1936		RS1/16S181J
R	1937		RS1/16S181J
R	1938	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1938	(EW)	RS1/16S151J
R	1939	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1939	(EW)	RS1/16S151J
R	1940	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1940	(EW)	RS1/16S151J
R	1941	(EW)	RS1/16S131J
R	1942	(EW)	RS1/16S131J
R	1943	(EW)	RS1/16S131J
R	1944		RS1/16S181J
R	1945		RS1/16S181J
R	1946		RS1/16S181J
R	1947	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1947	(EW)	RS1/16S151J
R	1948	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1948	(EW)	RS1/16S151J
R	1949	(UC,ES/RD,ES/RC)	RS1/16S131J
R	1949	(EW)	RS1/16S151J
R	1950	(EW)	RS1/16S131J
R	1951	(EW)	RS1/16S131J
R	1952	(EW)	RS1/16S131J
R	1953	(EW)	RS1/16S181J
R	1954	(EW)	RS1/16S181J
R	1955	(EW)	RS1/16S181J
R	1956	(EW)	RS1/16S301J
R	1957	(EW)	RS1/16S301J
R	1958	(EW)	RS1/16S301J
R	1959		RS1/16S271J
R	1960		RS1/16S0R0J
R	1962	(UC,ES/RD,ES/RC)	RS1/16S0R0J
R	1963		RS1/16S271J
R	1964		RS1/16S271J
R	1965		RS1/16S271J
R	1966		RS1/16S271J
R	2940		RS1/16S472J

=====Circuit Symbol and No.		===Part Name	Part No.
R	2941		RS1/16S104J
R	2942		RS1/16S334J
R	2943		RS1/16S0R0J
R	2944		RS1/16S473J
R	2945		RS1/16S102J
R	2946		RS1/16S513J
R	2947		RS1/16S105J
R	2948		RN1/16SE6802D
R	2949		RS1/16S103J
R	2951		RS1/16S103J
R	2953		RS1/16S471J
R	2955		RS1/16S393J
R	2958		RS1/10S122J
R	2966		RS1/16S153J

CAPACITORS

C	1901		CKSRYB104K16
C	1902		CKSRYB105K6R3
C	2941		CKSRYB104K16
C	2942		CKSRYB105K6R3
C	2943		CKSRYB103K50
C	2944		CKSRYB105K6R3
C	2945		CKSRYB474K10
C	2946		CKSRYB105K6R3
C	2947		CKSRYB104K16
C	2948		CKSRYB222K50
C	2949		CKSRYB152K50
C	2952		CKSRYB103K50
C	2953		CKSRYB473K50
C	2954		CCSRCH221J50
C	2955		CKSRYB473K50
C	2956	10µF	CCG1150
C	2957	10µF	CCG1150
C	2958		CKSYB225K16
C	2959	22pF	CCG1140
C	2961		CKSRYB273K25

Encoder Unit
Consists of Encoder PCB SW PCB

G H Unit Number: CWM7620
Unit Name : Encoder Unit

MISCELLANEOUS

IC	2801	IC	TA7806S
IC	2802	IC	TA78L05F
IC	2803	IC	BA6951FS
IC	2804	IC	TC7S14FU
IC	2805	Photo-interrupter	GP1S25
IC	2806	Photo-interrupter	GP1S25
IC	2807	IC	TC7W14FU
Q	2801	Transistor	2SA1615-Z
Q	2802	Transistor	DTC114EK
Q	2803	Transistor	DTC144EK
Q	2804	Transistor	DTC144EK
D	2804	Diode	UDZS3R9(B)
L	2801	Inductor	LCYA150K3225
L	2802	Inductor	LCTB150K2125
L	2803	Inductor	LCYA150K3225
S	2801	Spring Switch(DEG0)	CSN1053

=====Circuit Symbol and No.	===Part Name	Part No.
RESISTORS		
R 2800		RS1/10S0R0J
R 2801		RS1/16S153J
R 2802		RS1/4S751J
R 2803		RS1/4S751J
R 2804		RS1/16S1201F
R 2805		RS1/16S3000F
R 2807		RS1/16S563J
R 2808		RS1/4S2R0J
R 2809		RS1/16S221J
R 2811		RS1/16S273J
R 2813		RS1/16S471J
R 2814		RS1/10S391J
R 2815		RS1/16S473J
R 2816		RS1/4S2R0J
R 2817		RS1/16S0R0J
R 2818		RS1/16S103J
R 2819		RS1/16S0R0J
R 2820		RS1/16S0R0J
R 2821		RS1/16S473J
R 2822		RS1/16S0R0J
R 2823		RS1/10S391J
R 2824		RS1/16S473J
R 2825		RS1/16S0R0J
R 2829		RS1/16S103J
R 2830		RS1/16S103J
R 2831		RS1/16S1501F
R 2832		RS1/16S153J
R 2833		RS1/16S272J
CAPACITORS		
C 2801		CKSQYB104K25
C 2802		CEV101M16
C 2803		CKSRYB104K16
C 2804		CKSRYB104K16
C 2805		CSZSR100M16
C 2806		CKSRYB104K16
C 2807		CEV100M16
C 2808		CEV220M6R3
C 2809		CKSRYB104K16
C 2810		CCSRCH330J50
C 2811		CKSRYB104K16
C 2812		CKSRYB104K16
C 2813		CKSRYB104K16
C 2814		CKSRYB104K16
C 2815		CKSRYB104K16
C 2816		CEV100M16
C 2818		CKSYB106K6R3
C 2819		CKSRYB104K16
C 2820		CKSRYB104K16
C 2821		CKSQYB474K16
C 2824		CKSRYB104K16
C 2825		CCSRCH102J50
C 2826		CCSRCH102J50
C 2827		CKSRYB104K16

I Unit Number : CWX2574
Unit Name : DVD Core Unit V

MISCELLANEOUS

IC 1100	IC	AN8702FH
IC 1101	IC	NJM2904M
IC 1200	IC	MN677061ZYUB
IC 1300	IC	BA5985FM
IC 1400	IC	MNZS25BDAUB

=====Circuit Symbol and No.	===Part Name	Part No.
IC 1403	IC	TC74LCX244FT
IC 1405	IC	TC7SH04FU
IC 1500	IC	MSM56V16160F8TKFM
IC 1501	IC	MSM56V16160F8TKFM
IC 1502	IC	MN677532JAUB
IC 1503	IC	TC74VCX74FT
IC 1504	IC	TC74VCX04FT
IC 1506	IC	SM8703AV
IC 1509	IC	TC74VCX74FT
IC 1601	IC	AK4380VT
IC 1700	IC	PE5277A
IC 1701	IC	M5M5V216ATP-70HI
IC 1702	IC	PD6354B
IC 1704	IC	TC74VCX08FT
IC 1705	IC	TC7SH04FU
IC 1706	IC	TC7SH32FU
IC 1802	IC	BA033SFP
IC 1803	IC	BA18BC0WFP
IC 1804	IC	BA00BC0WFP
Q 1102	Transistor	2SD601A
Q 1104	Transistor	2SB1260
Q 1105	Transistor	2SB709A
Q 1107	Transistor	UN2211
Q 1108	Transistor	2SB1260
Q 1109	Chip Transistor	2SC2712
Q 1110	Chip Transistor	2SC2712
Q 1111	Chip Transistor	2SC2712
Q 1600	Transistor	2SA1037K
Q 1601	Transistor	2SA1037K
Q 1602	Transistor	FMG12
Q 1603	Transistor	IMD2A
Q 1700	Transistor	DTA123JK
D 1100	Diode	1SS355
D 1101	Diode	1SS355
D 1401	Diode	UDZ2R7(B)
D 1601	Chip Diode	MA151WA
D 1802	Diode	S2G-6600
D 1804	Diode	1SR154-400
L 1201	Inductor	CTF1409
L 1202	Inductor	CTF1409
L 1401	Inductor	CTF1409
L 1402	Inductor	CTF1409
L 1403	Inductor	CTF1395
L 1404	Inductor	CTF1473
L 1500	Inductor	CTF1395
L 1501	Inductor	CTF1394
L 1502	Inductor	CTF1409
L 1503	Inductor	CTF1399
L 1504	Inductor	CTF1399
L 1505	Inductor	CTF1399
L 1506	Inductor	CTF1409
L 1507	Inductor	CTF1473
L 1508	Inductor	CTF1473
L 1509	Inductor	CTF1473
L 1512	Inductor	CTF1470
L 1536	Inductor	CTF1470
L 1600	Inductor	CTF1473
L 1602	Inductor	CTF1399
L 1700	Inductor	CTF1395
L 1701	Inductor	CTF1409
L 1702	Inductor	CTF1473
L 1704	Inductor	CTF1473
L 1720	Inductor	CTF1473
X 1500	Resonator 27MHz	CSS1531
X 1700	Ceramic Resonator 5MHz	CSS1547

=====Circuit Symbol and No.		===Part Name	Part No.
S	1301	Spring Switch(CLAMP)	CSN1051
S	1302	Spring Switch(L/E ON/OFF)	CSN1051
S	1303	Spring Switch(8cmDETECT)	CSN1051
S	1304	Spring Switch(12cmDETECT)	CSN1051
VR	1500	Semi-fixed 2.2kΩ(B)	CCP1177
F	1600	Filter	CTF1515

RESISTORS

R	1101		RS1/16SS330J
R	1102		RS1/16SS3R9J
R	1103		RS1/16SS330J
R	1104		RS1/16SS3R9J
R	1105		RS1/16SS122J
R	1106		RS1/16SS472J
R	1107		RS1/16S6201D
R	1108		RS1/16SS3R9J
R	1109		RS1/16SS3R9J
R	1110		RS1/16S1002D
R	1113		RS1/16S2402D
R	1114		RS1/16SS823J
R	1115		RS1/16SS682J
R	1116		RS1/16SS3R9J
R	1117		RS1/16SS3R9J
R	1118		RS1/16SS223J
R	1119		RS1/16SS202J
R	1120		RS1/16SS105J
R	1121		RS1/16SS105J
R	1122		RS1/16SS103J
R	1123		RS1/16SS103J
R	1124		RS1/16SS103J
R	1125		RS1/16SS103J
R	1126		RS1/16SS103J
R	1127		RS1/16SS103J
R	1128		RS1/16SS3R9J
R	1129		RS1/16SS3R9J
R	1130		RS1/16SS102J
R	1131		RS1/16SS102J
R	1132		RS1/16SS102J
R	1133		RS1/16SS102J
R	1134		RS1/16SS102J
R	1135	Resistor Array	RAB4CQ0R0J
R	1136		RS1/16SS133J
R	1137		RS1/16SS133J
R	1138		RS1/16SS0R0J
R	1139		RS1/16SS0R0J
R	1140		RS1/16SS0R0J
R	1141		RS1/16SS0R0J
R	1142		RS1/16SS183J
R	1143		RS1/16SS273J
R	1144		RS1/16SS273J
R	1145		RS1/16SS0R0J
R	1146		RS1/16SS0R0J
R	1147		RS1/16SS0R0J
R	1148		RS1/16SS0R0J
R	1149		RS1/16SS102J
R	1150		RS1/16SS102J
R	1151		RS1/16SS102J
R	1152		RS1/16SS154J
R	1153		RS1/16SS154J
R	1154		RS1/16SS154J
R	1156		RS1/16SS224J
R	1157		RS1/16SS0R0J
R	1201		RS1/16SS203J
R	1202		RS1/16SS102J
R	1203		RS1/16SS471J
R	1204		RS1/16SS221J
R	1205		RS1/16SS221J
R	1206		RS1/16SS473J

=====Circuit Symbol and No.		===Part Name	Part No.
R	1207		RS1/16SS101J
R	1208		RS1/16SS101J
R	1209		RS1/16SS473J
R	1210		RS1/16SS222J
R	1212		RS1/16SS473J
R	1213		RS1/16SS101J
R	1215		RS1/16SS123J
R	1216		RS1/16SS473J
R	1219		RS1/16SS123J
R	1220		RS1/16SS105J
R	1221		RS1/16SS562J
R	1222		RS1/16SS273J
R	1223		RS1/16SS273J
R	1226		RS1/16SS153J
R	1227		RS1/16SS123J
R	1228		RS1/16SS472J
R	1229		RS1/16SS472J
R	1230		RS1/16SS472J
R	1231		RS1/16SS273J
R	1232		RS1/16S6801D
R	1233		RS1/16SS273J
R	1234		RS1/16SS183J
R	1235		RS1/16SS102J
R	1242	Resistor Array	RAB4CQ221J
R	1245		RS1/16SS562J
R	1246		RS1/16SS242J
R	1251		RS1/16SS473J
R	1255		RS1/16SS0R0J
R	1257		RS1/16S221J
R	1258		RS1/16SS221J
R	1259		RS1/16SS221J
R	1260		RS1/16SS221J
R	1261		RS1/16SS221J
R	1262		RS1/16SS273J
R	1263		RS1/16SS273J
R	1264		RS1/16SS104J
R	1301		RS1/16S3902D
R	1302		RS1/16S3902D
R	1303		RS1/16S3002D
R	1304		RS1/16S3902D
R	1305		RS1/16SS221J
R	1306		RS1/16SS0R0J
R	1307		RS1/16SS221J
R	1308		RS1/16S3002D
R	1310		RS1/16SS102J
R	1311		RS1/16S3902D
R	1312		RS1/16S0R0J
R	1314		RS1/16SS221J
R	1321		RS1/16SS221J
R	1323		RS1/16SS104J
R	1324		RS1/16SS473J
R	1325		RS1/16SS273J
R	1400	Resistor Array	RAB4CQ681J
R	1401	Resistor Array	RAB4CQ681J
R	1403		RS1/16SS222J
R	1405		RS1/16SS221J
R	1406		RS1/16SS103J
R	1409		RS1/16SS103J
R	1413		RS1/16SS681J
R	1416		RS1/16SS681J
R	1417		RS1/16SS103J
R	1418		RS1/16SS681J
R	1425		RS1/16SS104J
R	1426		RS1/16SS103J
R	1429		RS1/16S470J

=====Circuit Symbol and No.	===Part Name	Part No.
R 1434		RS1/16SS681J
R 1436		RS1/16SS103J
R 1437		RS1/16SS103J
R 1438		RS1/16SS221J
R 1439	Resistor Array	RAB4CQ0R0J
R 1440	Resistor Array	RAB4CQ0R0J
R 1441		RS1/16SS0R0J
R 1442		RS1/16SS221J
R 1443		RS1/16SS221J
R 1500		RS1/16SS560J
R 1501		RS1/16SS560J
R 1502		RS1/16SS560J
R 1503		RS1/16SS560J
R 1504		RS1/16SS560J
R 1505		RS1/16SS560J
R 1506		RS1/16SS560J
R 1507		RS1/16SS560J
R 1508		RS1/16SS560J
R 1509		RS1/16SS560J
R 1510		RS1/16SS560J
R 1511		RS1/16SS560J
R 1513		RS1/16SS750J
R 1514		RS1/16SS622J
R 1515		RS1/16SS162J
R 1516		RS1/16SS182J
R 1517		RS1/16SS201J
R 1518		RS1/16SS201J
R 1519		RS1/16S101J
R 1520		RS1/16S101J
R 1521		RS1/16S101J
R 1523		RS1/16SS221J
R 1524		RS1/16S470J
R 1527		RS1/16SS103J
R 1529		RS1/16SS104J
R 1534		RS1/16SS221J
R 1535		RS1/16SS101J
R 1537		RS1/16SS391J
R 1538		RS1/16SS391J
R 1539	Resistor Array	RAB4CQ391J
R 1540	Resistor Array	RAB4CQ391J
R 1541	Resistor Array	RAB4CQ391J
R 1542	Resistor Array	RAB4CQ391J
R 1543	Resistor Array	RAB4CQ391J
R 1544	Resistor Array	RAB4CQ391J
R 1545	Resistor Array	RAB4CQ391J
R 1546		RS1/16SS103J
R 1548		RS1/16SS103J
R 1549		RS1/16SS560J
R 1550		RS1/16SS560J
R 1551		RS1/16SS560J
R 1552		RS1/16SS560J
R 1553		RS1/16SS560J
R 1554		RS1/16SS560J
R 1555		RS1/16SS560J
R 1556		RS1/16SS560J
R 1557		RS1/16SS560J
R 1558		RS1/16SS560J
R 1559		RS1/16SS560J
R 1560		RS1/16SS560J
R 1561		RS1/16SS560J
R 1562		RS1/16SS560J
R 1563		RS1/16SS560J
R 1564		RS1/16SS560J
R 1565		RS1/16SS560J
R 1566		RS1/16S101J

=====Circuit Symbol and No.	===Part Name	Part No.
R 1567		RS1/16SS560J
R 1568		RS1/16SS560J
R 1569		RS1/16SS560J
R 1570		RS1/16SS560J
R 1571		RS1/16SS560J
R 1572		RS1/16SS560J
R 1573		RS1/16SS560J
R 1574		RS1/16SS560J
R 1575		RS1/16SS560J
R 1577		RS1/16S0R0J
R 1579		RS1/16S0R0J
R 1600		RS1/16SS271J
R 1601		RS1/16SS152J
R 1602		RS1/16SS101J
R 1604		RS1/16S3300D
R 1605		RS1/16SS122J
R 1607		RS1/16SS0R0J
R 1623		RS1/16SS102J
R 1624		RS1/16SS102J
R 1625		RS1/16SS223J
R 1626		RS1/16SS223J
R 1628		RS1/16S68R0D
R 1634		RS1/16SS472J
R 1635		RS1/16SS472J
R 1636		RS1/16SS472J
R 1637		RS1/16SS472J
R 1701		RN1/16SE1502D
R 1702		RS1/16SS221J
R 1703		RS1/16SS221J
R 1704		RS1/16SS104J
R 1705		RS1/16SS103J
R 1706		RS1/16SS103J
R 1707		RS1/16SS221J
R 1708		RS1/16SS0R0J
R 1709		RS1/16SS221J
R 1710		RS1/16SS473J
R 1711		RS1/16SS330J
R 1712		RS1/16SS0R0J
R 1713		RS1/16SS104J
R 1714		RS1/16SS104J
R 1715		RS1/16SS472J
R 1716		RS1/16SS104J
R 1717		RS1/16SS473J
R 1718		RS1/16SS104J
R 1719		RS1/16SS104J
R 1720		RS1/16SS473J
R 1721		RS1/16SS104J
R 1722		RS1/16SS104J
R 1723		RS1/16SS473J
R 1724		RS1/16SS221J
R 1725		RS1/16S0R0J
R 1726		RS1/16SS104J
R 1727		RS1/16SS103J
R 1728		RS1/16SS104J
R 1729		RS1/16SS104J
R 1730		RS1/16SS473J
R 1733		RS1/16SS104J
R 1734		RS1/16SS104J
R 1735		RS1/16SS222J
R 1736		RS1/16SS221J
R 1737		RS1/16SS221J
R 1738		RS1/16SS104J
R 1739		RS1/16SS103J
R 1740		RS1/16SS103J
R 1741		RS1/16SS221J

=====Circuit Symbol and No.	===Part Name	Part No.
R	1742	RS1/16SS104J
R	1743	RS1/16SS221J
R	1744	RS1/16SS221J
R	1745	RS1/16SS221J
R	1746	RS1/16SS221J
R	1747	RS1/16SS222J
R	1748	RS1/16SS473J
R	1749	RS1/16SS104J
R	1750	RS1/16SS472J
R	1751	RS1/16SS103J
R	1752	RS1/16SS104J
R	1753	RS1/16SS104J
R	1754	RS1/16SS104J
R	1755	RS1/16SS104J
R	1756	RS1/16SS473J
R	1757	RS1/16SS472J
R	1758	RS1/16SS104J
R	1762	RS1/16SS104J
R	1763	RS1/16SS104J
R	1764	RS1/16SS104J
R	1766	RS1/16SS104J
R	1771	RS1/16SS104J
R	1772	RS1/16SS104J
R	1773	RS1/16SS104J
R	1774	RS1/16SS473J
R	1775	RS1/16SS221J
R	1776	RS1/16SS104J
R	1777	RS1/16SS104J
R	1778	RS1/16SS0R0J
R	1801	RS1/16S3902D
R	1802	RS1/16S3302D
R	1808	RS1/16SS102J
R	1809	RS1/16SS102J
R	1812	RS1/16S0R0J
R	1813	RS1/16S0R0J
R	1814	RS1/16S0R0J
R	1815	RS1/16S0R0J

CAPACITORS

C	1100	CKSRYB105K10
C	1101	CKSRYB473K25
C	1102	CKSSYB103K16
C	1103	CSZSR101M6R3
C	1104	CKSSYB104K10
C	1105	CKSSYB104K10
C	1106	CKSRYB473K25
C	1107	CKSSYB103K16
C	1108	CSZSR101M6R3
C	1109	CKSSYB104K10
C	1110	CKSRYB154K10
C	1111	CCSSCH221J25
C	1114	CCSSCH330J50
C	1115	CKSSYB104K10
C	1116	CCSSCH221J25
C	1117	CKSRYB105K10
C	1118	CKSSYB104K10
C	1119	CKSSYB104K10
C	1120	CKSSYB104K10
C	1121	CKSSYB104K10
C	1122	CSZSC470M16
C	1123	CKSRYB273K25
C	1124	CKSSYB104K10
C	1125	CKSSYB104K10
C	1126	CKSSYB473K10

=====Circuit Symbol and No.	===Part Name	Part No.
C	1127	CCSRCH561J50
C	1128	CKSSYB104K10
C	1129	CKSSYB104K10
C	1130	CCSRCH102J50
C	1131	CCSSCH120J50
C	1133	CCSRCH561J50
C	1134	CKSSYB104K10
C	1136	CCSSCH101J50
C	1137	CCSSCH101J50
C	1138	CCSSCH101J50
C	1139	CKSSYB104K10
C	1140	CKSSYB103K16
C	1141	CKSSYB104K10
C	1142	CKSSYB104K10
C	1143	CKSSYB473K10
C	1144	CKSSYB473K10
C	1145	CKSSYB103K16
C	1146	CKSSYB473K10
C	1148	CKSSYB103K16
C	1201	CKSRYB105K10
C	1202	CCSSCH101J50
C	1203	CKSRYB474K10
C	1204	CCSRCH561J50
C	1205	CCSRCH331J50
C	1206	CKSRYB105K10
C	1207	CKSSYB104K10
C	1208	CCSRCH471J50
C	1209	CCSRCH391J50
C	1210	CKSRYB105K10
C	1211	CCSSCH101J50
C	1212	CKSSYB104K10
C	1213	CKSRYB474K10
C	1214	CCSRCH102J50
C	1215	CCSRCH102J50
C	1216	CKSSYB562K25
C	1217	CCSRCH102J50
C	1218	CKSSYB104K10
C	1219	CKSSYB104K10
C	1220	CKSRYB474K10
C	1221	CCSSCH470J50
C	1222	CKSRYB183K25
C	1223	CCSRCH102J50
C	1224	CKSSYB104K10
C	1225	CKSSYB104K10
C	1227	CKSSYB103K16
C	1228	CKSSYB104K10
C	1229	CCSRCH102J50
C	1230	CKSSYB103K16
C	1231	CKSSYB104K10
C	1232	CKSRYB154K10
C	1233	CKSSYB104K10
C	1234	CKSSYB104K10
C	1235	CKSSYB104K10
C	1236	CKSSYB471K50
C	1241	CKSSYB103K16
C	1242	CKSSYB103K16
C	1243	CKSSYB104K10
C	1300	CKSSYB103K16
C	1301	CKSSYB103K16
C	1304	CKSRYB104K16
C	1305	CEV101M16
C	1308	CKSSYB104K10
C	1400	CKSSYB104K10
C	1401	CKSSYB104K10
C	1402	CKSSYB104K10

Circuit Symbol and No.	Part Name	Part No.
C 1403		CKSSYB104K10
C 1404		CKSSYB104K10
C 1405		CKSSYB104K10
C 1406		CKSSYB104K10
C 1407		CKSSYB104K10
C 1408		CKSSYB104K10
C 1409		CKSSYB104K10
C 1410		CKSSYB104K10
C 1411		CKSSYB104K10
C 1412		CKSSYB104K10
C 1413		CKSSYB104K10
C 1414		CKSRYB105K10
C 1415		CKSSYB104K10
C 1416		CKSSYB104K10
C 1418		CKSSYB471K50
C 1421		CKSSYB104K10
C 1423		CKSSYB104K10
C 1500		CKSSYB104K10
C 1501		CKSSYB104K10
C 1502		CKSSYB104K10
C 1503		CKSSYB104K10
C 1504		CKSSYB104K10
C 1505		CKSSYB104K10
C 1506		CSZSC101M10
C 1507		CKSSYB104K10
C 1508		CKSSYB104K10
C 1509		CKSSYB104K10
C 1510		CKSSYB104K10
C 1511		CKSSYB104K10
C 1512		CKSSYB104K10
C 1513		CKSSYB104K10
C 1514		CKSSYB104K10
C 1515		CKSSYB104K10
C 1516		CKSSYB104K10
C 1517		CKSSYB104K10
C 1518		CKSSYB104K10
C 1519		CKSSYB104K10
C 1520		CKSSYB104K10
C 1521		CKSSYB104K10
C 1522		CKSSYB104K10
C 1523		CKSSYB104K10
C 1524		CKSSYB104K10
C 1525		CKSSYB104K10
C 1526		CKSSYB104K10
C 1527		CKSSYB104K10
C 1528		CKSSYB104K10
C 1529		CKSSYB471K50
C 1530		CKSSYB104K10
C 1532		CKSSYB104K10
C 1534		CCSSCH150J50
C 1535		CKSSYB104K10
C 1536		CKSSYB104K10
C 1537		CCSSCH150J50
C 1538		CKSSYB104K10
C 1539		CKSSYB104K10
C 1540		CKSRYB105K10
C 1541		CKSRYB105K10
C 1542		CKSSYB104K10
C 1543		CKSSYB104K10
C 1544		CKSSYB104K10
C 1545		CKSSYB104K10
C 1546		CKSSYB104K10
C 1547		CKSSYB104K10
C 1548		CKSSYB104K10
C 1549		CKSSYB104K10
C 1550		CKSSYB104K10
C 1551		CKSSYB104K10
C 1552		CKSSYB104K10
C 1553		CKSSYB104K10
C 1554		CKSSYB104K10
C 1555		CKSSYB104K10
C 1556		CKSSYB104K10
C 1570		CSZSR101M6R3
C 1571		CSZSR101M6R3
C 1572		CEV101M10
C 1573		CEV101M10
C 1574		CSZSC470M10
C 1575		CSZSC470M10
C 1576		CKSSYB104K10
C 1577		CKSSYB104K10
C 1578		CKSSYB104K10
C 1579		CKSSYB104K10
C 1600		CKSRYB104K16
C 1601		CSZSR4R7M16
C 1602		CKSSYB102K50
C 1608		CSZSR4R7M16
C 1609		CSZSR4R7M16
C 1634	10µF/10V	CCH1349
C 1635	10µF/10V	CCH1349
C 1636		CKSSYB104K10
C 1637		CKSSYB104K10
C 1700		CKSSYB104K10
C 1701		CKSSYB104K10
C 1702		CKSRYB105K10
C 1703		CKSRYB105K10
C 1704		CKSSYB104K10
C 1705		CKSRYB105K10
C 1706		CKSSYB104K10
C 1707		CKSRYB105K10
C 1708		CKSSYB104K10
C 1709		CKSSYB104K10
C 1710		CKSSYB104K10
C 1711		CKSSYB104K10
C 1712		CKSSYB103K16
C 1713		CKSSYB104K10
C 1714		CKSYB106K6R3
C 1715		CKSSYB104K10
C 1716		CKSSYB104K10
C 1717		CKSSYB104K10
C 1719		CKSSYB471K50
C 1720		CKSSYB103K16
C 1721		CKSSYB104K10
C 1722		CKSSYB103K16
C 1727		CCSRCH180J50
C 1728		CCSRCH180J50
C 1800		CKSRYB474K10
C 1801		CKSRYB474K10
C 1802		CKSRYB474K10
C 1803		CKSRYB474K10
C 1804	22µF/6.3V	CCH1300
C 1805	22µF/6.3V	CCH1300
C 1808		CSZSC101M10
C 1809		CCSRCH102J50
C 1810		CCSRCH102J50
C 1811		CSZSR101M6R3
C 1812		CSZSC101M10

K Unit Number : CWX2565
Unit Name : LCD Module

MISCELLANEOUS

=====Circuit Symbol and No.	Part Name	Part No.
Q 1		
Q 2	IC	NJM2107F
Q 3		
Q 4	IC	TC7SH04FU
Q 5	IC	TC7SH04FU
Q 6	IC	TC7S66FU
Q 7	IC	TC7SET08FU
Q 201	IC	IR3Y29B
Q 202		
Q 203		
Q 204		
Q 205	Transistor	2SA1162
Q 206		
Q 207	IC	TC7S66FU
Q 208	IC	TC7S66FU
Q 210		
Q 211	IC	TC7S66FU
Q 212	IC	TC7S66FU
Q 271	IC	TC74HC4053AFT
Q 272	Transistor	2SA1162
Q 282	IC	TC7W14FU
Q 291	IC	TC7SET08FU
Q 292	IC	TC7S14FU
Q 293	IC	TC7S14FU
Q 501	IC	TA75072F
Q 502	Transistor	2SC3265
Q 503	Transistor	2SA1298
Q 504	Transistor	2SC3265
Q 505	Transistor	2SA1298
Q 651	IC	AN6308S
Q 652	Transistor	2SC2712
Q 801		
Q 802		
Q 803		
D 1	Diode	1SV231
D 2		
D 3		
D 4		
D 5		
D 801		
D 802		
D 803	Diode	SB05-05CP
D 851	Diode	1SS250
D 852	Diode	1SS250
D 853		
L 1		
L 201		
L 202		
L 203		
L 204		
L 205		
L 277		
L 278		
L 279		
L 601		
L 801		
L 852	Inductor	CTF1504
L 853	Inductor	CTF1504
JP 1		RS1/16S0R0J
JP 2		RS1/16S0R0J
JP 3		RS1/16S0R0J
JP 7		RS1/16S0R0J
JP 8		RS1/16S0R0J
JP 40		RS1/16S0R0J
JP 41		RS1/16S0R0J
JP 42		RS1/16S0R0J
JP 803		RS1/16S0R0J
JP 804		RS1/16S0R0J
JP 806		RS1/16S0R0J
JP 808		RS1/16S0R0J
JP 809		RS1/16S0R0J
JP 810		RS1/16S0R0J
JP 851		RS1/16S0R0J
JP 852		RS1/16S0R0J
JP 853		RS1/16S0R0J
JP 860		RS1/8S0R0J
JP 861		RS1/8S0R0J
F 801	Fuse 1A	CEK1191
B 801		
B 802		
RM 8		
X 201		
X 202		
FL 1		
T 801		
VR 1		
VR 201		
VR 202		
VR 203		
VR 204		
VR 205		
VR 206		
VR 501		
VR 502		
VR 801		

RESISTORS

=====Circuit Symbol and No.	Part Name	Part No.
R 2		RS1/16S331J
R 3		RS1/16S332J
R 4		RS1/16S101J
R 5		RS1/16S182J
R 6		RS1/16S153J
R 7		RS1/16S105J
R 8		RS1/16S683J
R 9		RS1/16S153J
R 10		RS1/16S683J
R 11		RS1/16S472J
R 12		RS1/16S472J
R 13		RS1/16S473J
R 14		RS1/16S362J
R 15		RS1/16S303J
R 17		RS1/16S472J
R 23		RS1/16S0R0J
R 27		RS1/16S0R0J
R 28		RS1/16S102J
R 30		RS1/16S0R0J
R 31		RS1/16S0R0J
R 42		RS1/16S0R0J
R 44		RS1/16S102J
R 45		RS1/16S102J
R 46		RS1/16S0R0J
R 47		RS1/16S0R0J
R 61		RS1/16S101J
R 63		RS1/16S101J
R 64		RS1/16S101J
R 201		RS1/16S563J
R 203		RS1/16S152J

Circuit Symbol and No.	Part Name	Part No.
R 206		RS1/16S512J
R 209		RS1/16S105J
R 210		RS1/16S152J
R 211		RS1/16S472J
R 212		RS1/16S331J
R 213		RS1/16S512J
R 214		RS1/16S153J
R 215		RS1/16S562J
R 216		RS1/16S152J
R 217		RS1/16S331J
R 218		RS1/16S3002F
R 219		RS1/16S2002F
R 220		RS1/16S2402F
R 221		RS1/16S2702F
R 222		RS1/16S273J
R 223		RS1/16S273J
R 224		RS1/16S273J
R 225		RS1/16S273J
R 226		RS1/16S473J
R 227		RS1/16S153J
R 228		RS1/16S473J
R 229		RS1/16S153J
R 230		RS1/16S101J
R 231		RS1/16S101J
R 234		RS1/16S102J
R 235		RS1/8S680J
R 236		RS1/8S680J
R 237		RS1/8S680J
R 238		RS1/16S681J
R 239		RS1/16S561J
R 240		RS1/16S1802F
R 242		RS1/16S624J
R 243		RS1/16S274J
R 244		RS1/16S334J
R 245		RS1/16S563J
R 246		RS1/16S101J
R 247		RS1/16S151J
R 248		
R 249		
R 250		
R 251		RS1/16S474J
R 260		RS1/16S102J
R 261		RS1/16S103J
R 262		RS1/16S101J
R 272		RS1/16S152J
R 273		RS1/16S681J
R 274		RS1/16S183J
R 275		RS1/16S221J
R 276		RS1/16S221J
R 277		RS1/16S221J
R 278		RS1/16S104J
R 279		RS1/16S104J
R 280		RS1/16S104J
R 285		RS1/16S101J
R 287		RS1/16S682J
R 291		RS1/16S101J
R 292		RS1/16S621J
R 293		RS1/16S152J
R 501		RS1/16S5602F
R 502		RS1/16S2701F
R 503		RS1/16S103J
R 504		RS1/16S911J
R 505		RS1/16S1002F
R 506		RS1/16S2201D
R 507		RS1/16S101J
R 508		RS1/16S103J
R 509		RS1/16S333J
R 510		RS1/16S333J
R 511		RS1/16S103J
R 512		RS1/16S682J
R 513		RS1/16S183J
R 514		RS1/16S101J
R 515		RS1/16S123J
R 516		RS1/16S432J
R 517		RS1/16S0R0J
R 518		RS1/16S101J
R 651		RS1/16S151J
R 652		RS1/16S151J
R 653		RS1/8S750J
R 654		RS1/8S750J
R 655		RS1/16S332J
R 656		RS1/16S751J
R 802		
R 803		RS1/16S1502F
R 804		RS1/16S203J
R 805		RS1/16S823J
R 851		RS1/16S105J
R 852		RS1/16S564J
R 853		RS1/16S562J
R 854		RS1/8S0R0J

CAPACITORS

Circuit Symbol and No.	Part Name	Part No.
C 1		CCSRCH470J50
C 2		CCSRCH101J50
C 3		CCSRCH102J25
C 4		CKSRYB104K16
C 5		CKSRYB104K16
C 6		CCSRCH681J50
C 7		CKSRYB104K16
C 8		CKSRYB104K16
C 9		CKSRYB104K16
C 10		CKSRYB104K16
C 18		CKSRYF224Z16
C 19		CKSRYF224Z16
C 20		CKSRYF224Z16
C 21		CKSRYF224Z16
C 22		CKSRYF224Z16
C 23		CKSRYF224Z16
C 24		CKSRYF224Z16
C 25		CKSRYF224Z16
C 26		CKSRYF224Z16
C 27		CKSRYF104Z25
C 28		CKSRYF104Z25
C 29		CKSRYF224Z16
C 30		CKSRYF224Z16
C 31		CKSRYF224Z16
C 32		CKSRYF224Z16
C 60		CKSRYB103K50
C 61		CKSRYB103K50
C 62		CKSRYB103K50
C 63		CKSRYB103K50
C 64		CKSRYB103K50
C 66		CKSRYB103K50
C 67		CKSRYB103K50
C 68		CKSRYB103K50
C 69		CKSRYB103K50
C 70		CKSRYB103K50
C 71		CKSRYB103K50
C 72		CKSRYB103K50
C 73		CKSRYB103K50
C 201		CKSRYF105Z10
C 202		CCSRCH220J50

=====Circuit Symbol and No.		===Part Name	Part No.
C	203		CCSRCH680J50
C	204		CKSYB106K6R3
C	205		CCSRCH681J50
C	206		CKSRYF104Z25
C	207		CCSRCH560J50
C	208		CKSRYB103K50
C	209		CKSRYB473K16
C	210		CCSRCH820J50
C	211		CKSRYB103K50
C	212		CKSRYB103K50
C	213		CKSRYF105Z10
C	214		CKSRYF104Z25
C	215		CCSRCH6R0D50
C	216		CKSQYB474K25
C	217		CKSRYB103K50
C	218		CCSRCH5R0C50
C	219		CKSRYF104Z25
C	220		CSZS1R0M25
C	221		CSZS1R0M25
C	222		CSZSR47M20
C	223		CKSRYF105Z10
C	224		CSZS1R0M25
C	225		CKSRYB103K50
C	226		CKSRYB103K50
C	227		CKSRYB103K50
C	228		CKSRYB103K50
C	229		CKSRYB103K50
C	230		CKSRYB103K50
C	231		CCSRCH681J50
C	232		CCSRCH331J50
C	234		CSZSR68M16
C	235		CKSRYB103K50
C	236		CKSRYB154K10
C	237		CKSRYF104Z25
C	238		CSZSR68M16
C	239		CSZSR68M16
C	240		CKSRYF104Z25
C	241		CKSRYF104Z25
C	242		CKSRYF104Z25
C	243		CKSQYB474K25
C	246		CKSYB225K16
C	247		CKSRYB103K50
C	248		CCSRCH8R0D50
C	249		CCSRCH4R0C50
C	250		CKSRYF224Z16
C	251		CKSRYF224Z16
C	253		CSZSR47M20
C	254		CSZSR68M16
C	255		CSZSR68M16
C	271		CKSRYF104Z25
C	275		CCSRCH390J50
C	276		CCSRCH390J50
C	277		CCSRCH390J50
C	284		CCSRCH221J50
C	285		CKSRYF224Z16
C	291		CCSRCH100D50
C	292		CCSRCH561J50
C	293		CKSRYF224Z16
C	294		CKSRYF224Z16
C	296		CKSRYF224Z16
C	501		CKSRYB103K50
C	502		CKSYB106K6R3
C	503		CKSRYB103K50
C	504		CKSYB106K6R3
C	505		CSZSR10M35

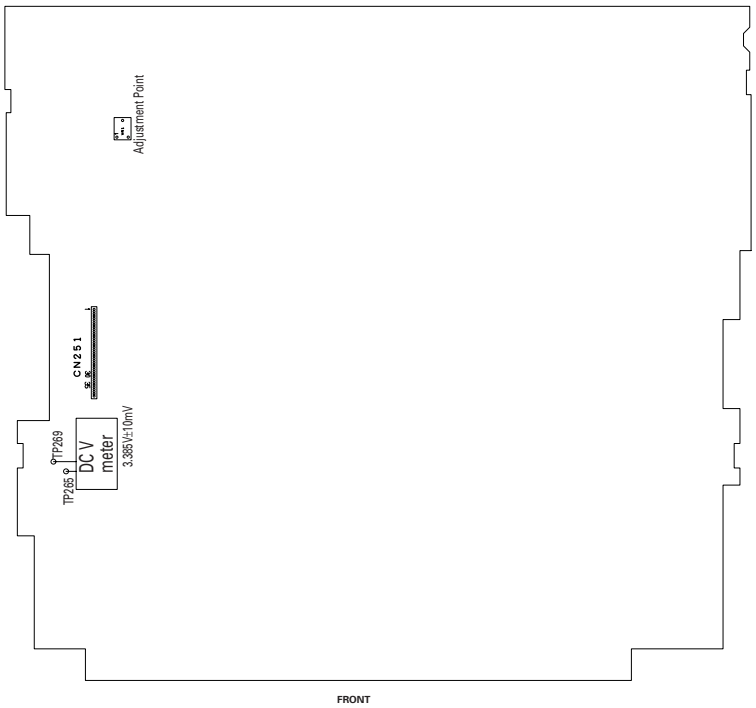
=====Circuit Symbol and No.		===Part Name	Part No.
C	651		CKSYB106K6R3
C	652		CKSYB106K6R3
C	653		CKSRYF104Z25
C	654		CKSYB106K6R3
C	801		
C	803		CKSRYB473K16
C	804		CSZS2R2M16
C	805		CKSYB475K16
C	806		
C	808		CCSRCH101J50
C	809	47µF/6.3V	CCH1372
C	814		CCSRCH330J50
C	851		CSZSR4R7M25
C	853		CSZSR22M35
C	854		CSZSR22M35
C	855		CSZSR22M35
C	856		CCSRCH471J50
C	857		CSZSR22M35

Miscellaneous Parts List

		Pickup Unit(Service)(DP4)	CXX1530
M	1	Motor Unit(LOADING)	CXB5960
M	2	Motor Unit(CARRIAGE)	CXB5955
M	3	Motor(SPINDLE)	CXB6218
M	1	Motor Unit(Drive Motor)	CXB7612

6. ADJUSTMENT

6.1 VOLTAGE ADJUSTMENT FOR DVD MECHANISM



6.2 DVD MECHANISM MODULE

Cautions for servicing

This product uses 5V and 3.3V as standard voltages. The electrical potential that is the reference for signals, is not GND, but VREF (approximately 2.2V) and VHALF (approximately 1.65V).

During product adjustments, if the reference voltage is mistakenly taken as GND, and a grounding contact is made, not only would it be impossible to measure the accurate electrical potential, but also the servo motor would malfunction, resulting in the application of a strong impact on the pick up. The following precautionary measures should be strictly adhered to, in order to avoid such problems.

The reference voltage and GND should not be confused when using the minus probe of a measurement device. When an oscilloscope is being used special care should be taken to make sure that the reference voltage is not connected to the probe of ch1 (on the minus side), while the probe of ch2 (on the minus side), is connected to GND. Further, since the body frame of most measurement devices have the same electrical potential as the minus side of the probe, the body frame of the measurement device should be set to floating ground.

If the reference voltage is connected to GND by mistake, turn the regulator OFF immediately, or turn the power OFF.

- Remove the filters and wires used for measurements only after the regulator has been turned OFF.
- After the power supply is turned on, regulator ON the following adjustment and measurement are promptly done.
- Whenever the product is in the test mode, the software will not take any protective action. For this reason, special care should be taken to make sure that no mechanical or electrical shock could be applied to the product when taking measurements in the test mode.
- Whenever the EJECT key is pressed to eject the disk, no other keys, other than the EJECT key, should be pressed until the disk eject action has been completed.
- Press the EJECT key only after the disk has stopped completely.
- If the product hangs up turn the power OFF immediately.
- Laser didoes may be damaged, if the volume switch for the laser power adjustment of the pick up unit, is turned.
- Please connect with the head unit of the IP BUS comformity and do the test mode.

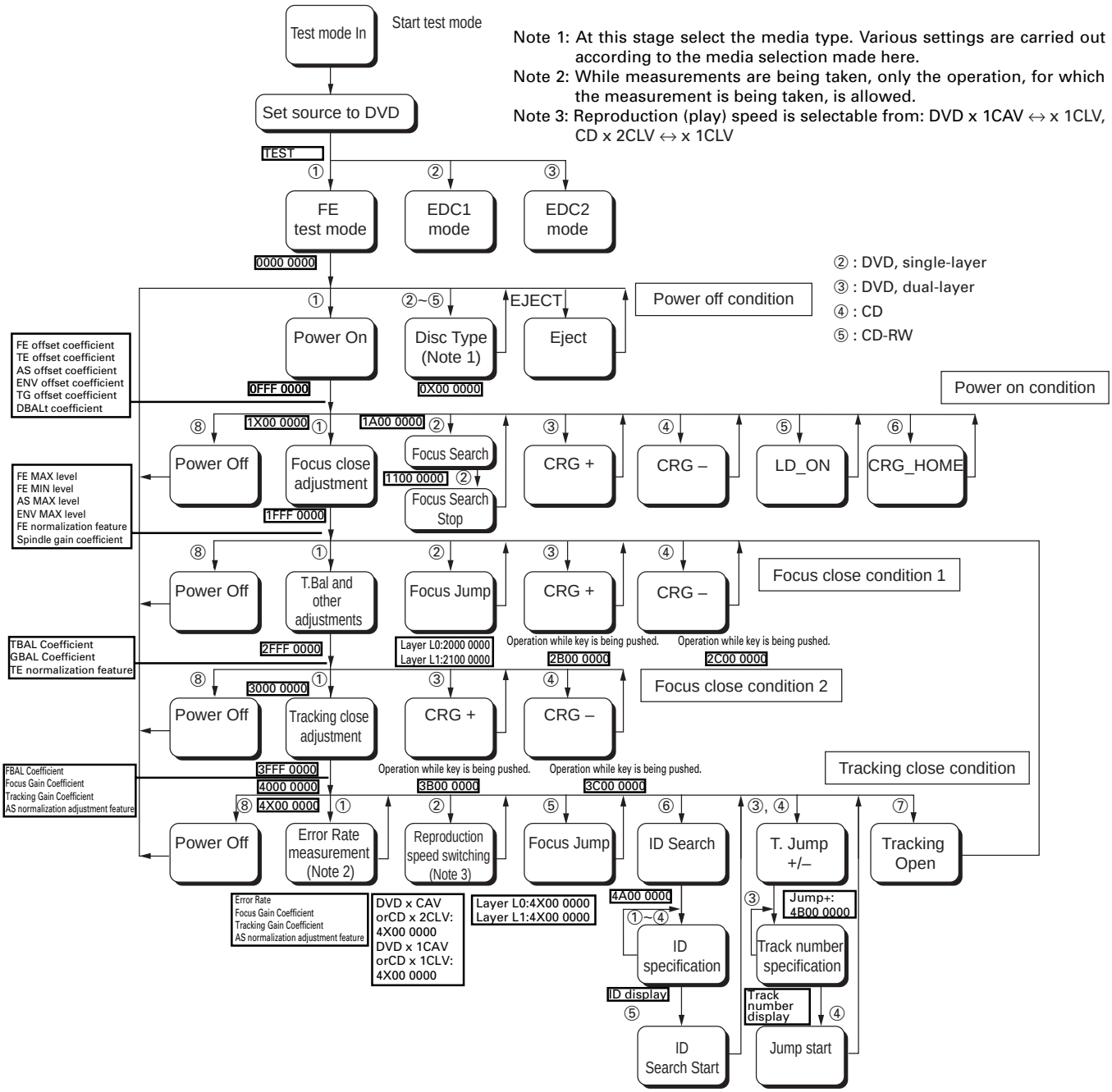
Attention)

There is a head unit that the test mode does not operate.

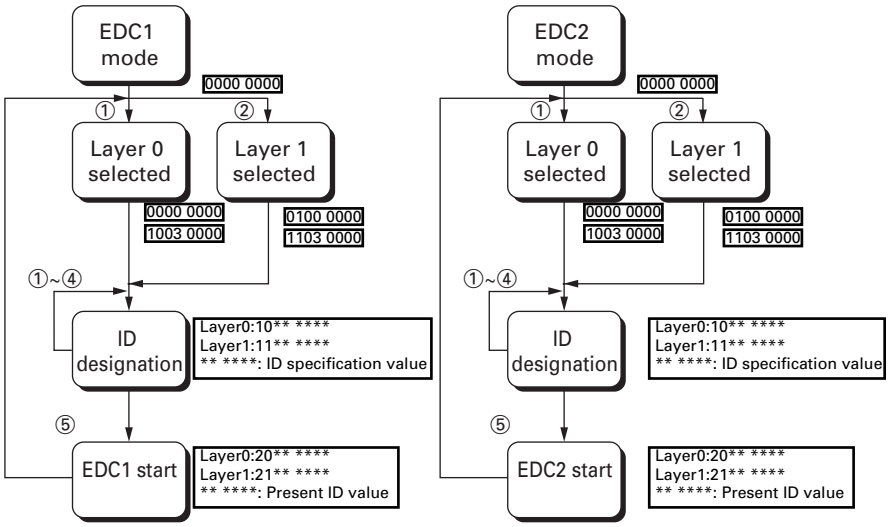
- Test mode starting procedure
  Reset while pressing the 4 and 6 keys together.

Please use the " remote control unit of the product accessory" after the test mode starts.

● Front-End test mode flow chart



Note 1: At this stage select the media type. Various settings are carried out according to the media selection made here.
Note 2: While measurements are being taken, only the operation, for which the measurement is being taken, is allowed.
Note 3: Reproduction (play) speed is selectable from: DVD x 1CAV ↔ x 1CLV, CD x 2CLV ↔ x 1CLV



F-close and F-search cannot be executed, unless LD-ON is set.
[If F-close isn't executed within 9 seconds after LD-ON,
it switches to LD-OFF automatically. And even if F-search is executed
within 9 seconds after LD-ON, it also switches to LD-OFF.]

The track number designation is selected from the track numbers already prepared for selection.

Switching to cyclic operation is made at step ③, and the decision is finalized (entered) in step ④.

For CD: Tracks 1, 4, 10, 11 and 32.

For DVD: Tracks 1, 4, 10, 11, 32, 64 and 100.

Method for designating an ID address:

• A number of digits are determined through commands ① and ②. Numerical UP/DOWN operations are performed through commands ③ and ④. The decision is finalized (entered) with command ⑤.

OSD display

Error Code List

Error status from DVD micurocomputer	Contents	Display
0X50	Mecha. error	No dislay
0X40	No disc	No dislay
0X30	The temperature is abnormal	Thermal Protection in Motion
0X20	Read error	Error-02-XX
0XE2	Non-playable disc	NON-PLAYABLE DISC
0X90	Drrerent region disc	DFFERENT REGION DISC
0XFF	Undefined error	Error-FF

Error code of read error(Part of XX)

Error Code	Contents	Display
0X99	Data cannot read	Please condirm the disc
0X80	The address cannot be found	Please condirm the disc
0X90	Focus error	Please condirm the disc
0X91	Spindle lock NG	DVD is stopping because mechanism detected abnormality
0X92	Carrige home NG	DVD is stopping because mechanism detected abnormality
0X93	FOK error	Please condirm the disc
0X94	ID/Subcode cannot be read	Please condirm the disc
0X95	High spindle rotation	Please condirm the disc
0X96	Row spindle rotation	DVD is stopping because mechanism detected abnormality
0X98	TOC cannot be found	Please condirm the disc
0X9A	AV chip error	DVD is stopping because mechanism detected abnormality
0X9B	RecaveryNG(BE)	DVD is stopping because mechanism detected abnormality

● Skew adjustment

If any of the following replacements have been performed on the system, adjustments for pick up, must be conducted:

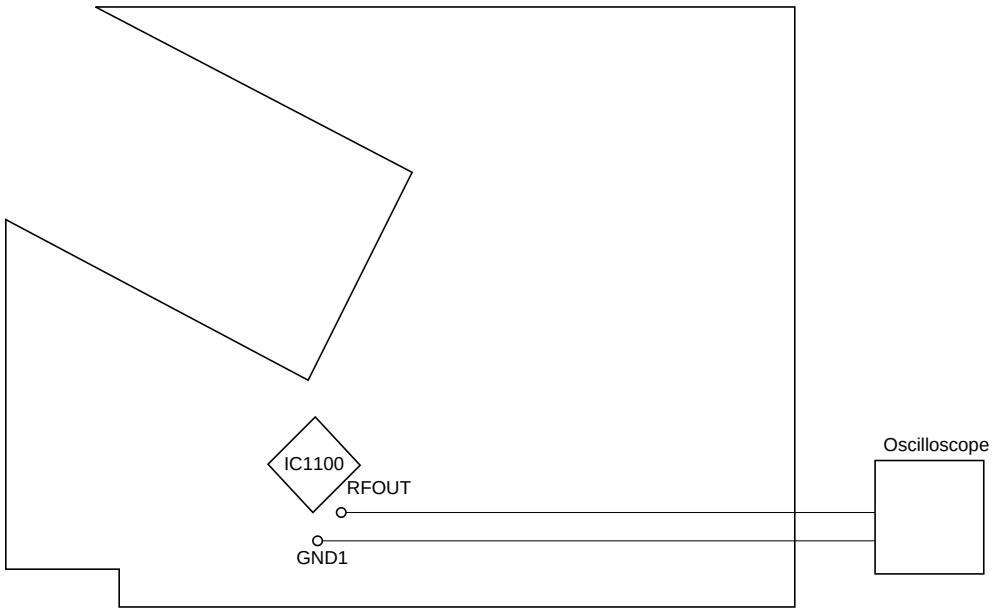
1. Pick up unit replacement
2. Spindle motor replacement
3. Carriage chassis replacement
4. Pick up unit main shaft replacement
5. Pick up unit sub-shaft replacement

Measurement device and tools : Oscilloscope
Allen key wrench
40-pin flexible extension
Adhesive material(GEM1033)
Screw rock(GYL1001)

Disk used : GGV1018
Measurement reference : GND1
Measurement point : RFOUT

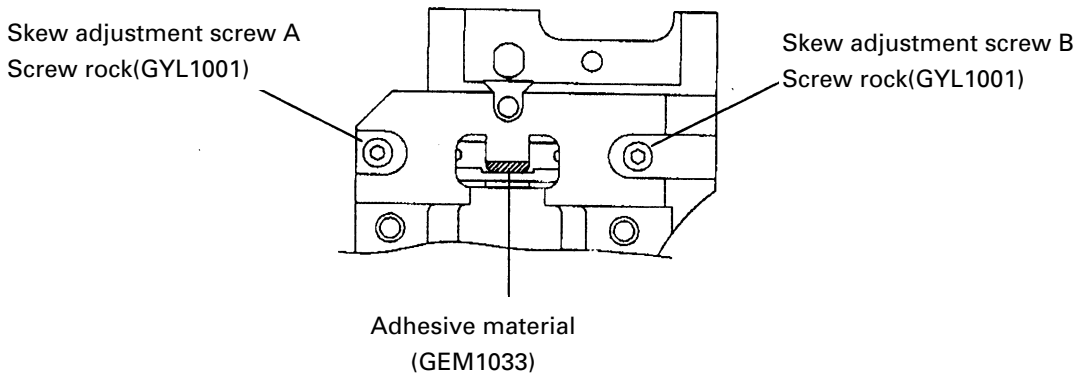
Skew adjustment connection diagram

• DVD core unit V

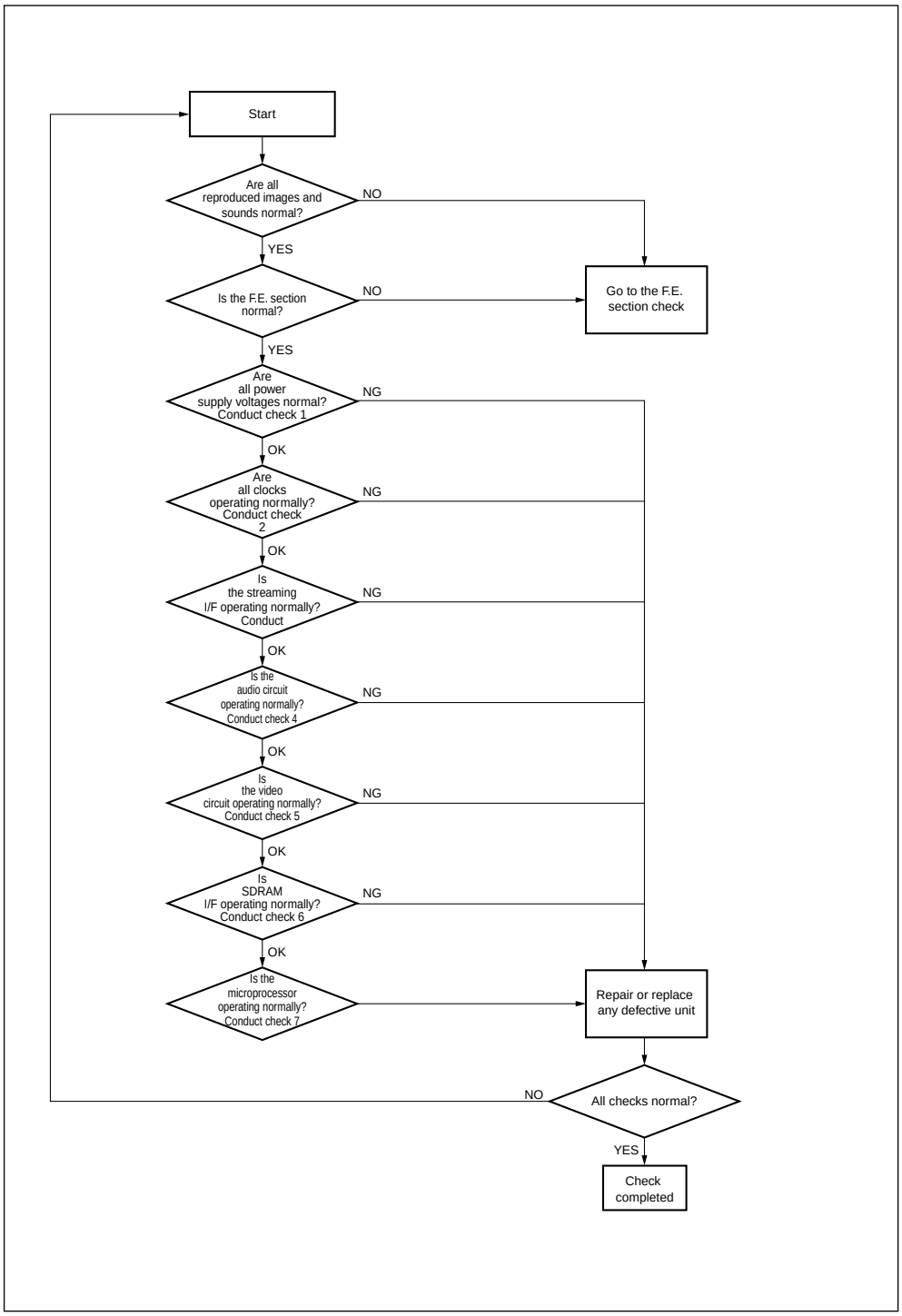


Symptoms that can occur if proper adjustments are not made: Error rate reaches 10^{-3} (10^{-4} or less under normal conditions).
The RF jitter becomes more pronounced - the RF waveform becomes deformed.
Retraction of the tracking and the servo motor, become unstable.
Cautions for performing adjustments: Do not look directly into the laser beam for any prolonged periods of time.
Procedure:
1. Replace the cable, connecting the product's main unit and the DVD mechanical module, with a 40-pin extended flexible cable (GGD1170), and turn the DVD mechanical module upside down, in order to proceed with pick-up unit adjustments.
2. Remove adhesive materials from the pick-up unit, using tweezers.
(Note) Make sure that adhesive material fragments are not scattered while removing the adhesive from the unit. Be also very careful not to exert excessive force on the actuator.
3. Connect the unit to an oscilloscope, referring to the connection diagram.
4. Turn the product power ON, and load the disk for adjustments (GGV1018).
5. Set the disk type to single-layer DVD in the front-end test mode, turn the power ON and then move the pick-up to the middle radius.
6. LD ON.
7. Close in the focus(Do not carry out 'T.Bal adjustment' and 'Tracking close'.)
8. Maximize the level by slightly turning the skew adjustment screw A, while looking at the RF waveform level on the oscilloscope.
Next, maximize the level by turning the skew adjustment screw B, slightly. Repeat this procedure three times and adjust the unit to attain a maximum level.
9. Turn the power OFF in the test mode, and eject the disk after verifying that it has stopped spinning.
10. Apply adhesive and screw lock materials, to the locations specified in the pick-up diagram (shown below).
Apply the adhesive material to secure the resin components on the pick-up chassis.
Apply the screw lock material to secure the screws on the pick-up chassis.
Do not apply any of these materials to the pick-up section or mechanical sections, which are not specified.
Keep the unit away from vibration or shock until the materials securely fix the components and screws in place.

PU diagram



● Back end section check flow chart



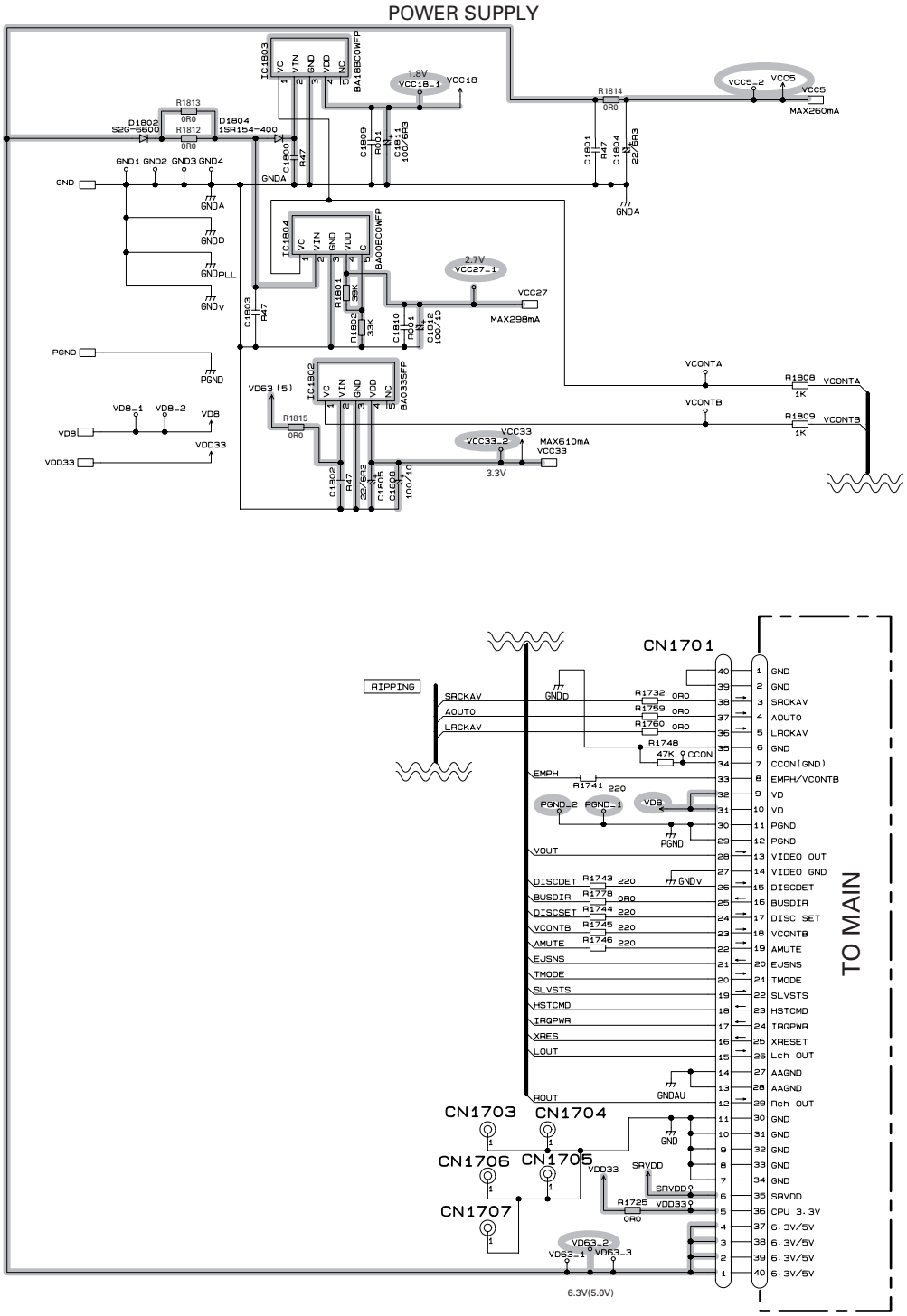
Check 1: Are all power supply voltages normal?

Reproduce DVD-REF-A1 Title 1.

Verify the voltage of the sensing pin.

If results are not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in the vicinity of IC1801 through 1804 (the section marked ① in the circuit diagram).

NO.	Verification location	Rated value	Unit
1	VD8-PGND	8±0.3	V
3	VD63-GND	5±0.25	V
4	VDD33-GND	3.3±0.3	V
5	SRVDD-GND	3.3±0.3	V
6	VCC5-GND	5±0.25	V
7	VCC33-GND	3.3±0.17	V
8	VCC27-GND	2.73±0.07	V
9	VCC18-GND	1.8±0.04	V



Schematic diagram ①

Check 2: Are all clocks operating normally?

Reproduce DVD-REF-A1 Title 1.

Verify the circuit described in Figure ②.

This check is the same for all DVD-V compatible modules.

Checks are to be conducted with a GND reference.

If locations listed under "verification location 2", can be verified, there will be no need to perform verifications for the locations listed under "verification location 1."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in the vicinity of IC1506 (the section marked ② in the circuit diagram).

NO.	Verification location 1 (contact measurements)	Verification location 2	Media	Rated value 1	Rated value 2	Rated value 3
1	CLK27	IC1502 99pin	ALL	2.65V~VCC33	GND~0.65V	27MHz±50ppm
2	EXTCK	IC1502 110pin IC1601 1pin	DVD	2.65V~VCC33	GND~0.65V	36.8640MHz± 100ppm
3	EXTCK	IC1502 110pin IC1601 1pin	CD	2.65V~VCC33	GND~0.65V	33.8688MHz± 100ppm
4	MCK33	IC1400 100pin	ALL	2.33~VCC33	GND~0.99V	33.8688MHz±100ppm

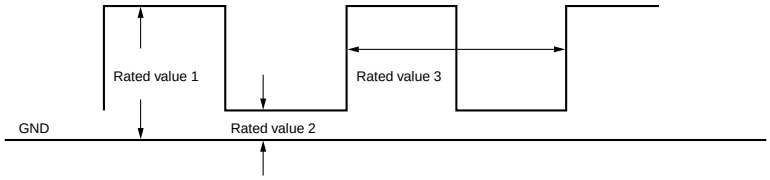
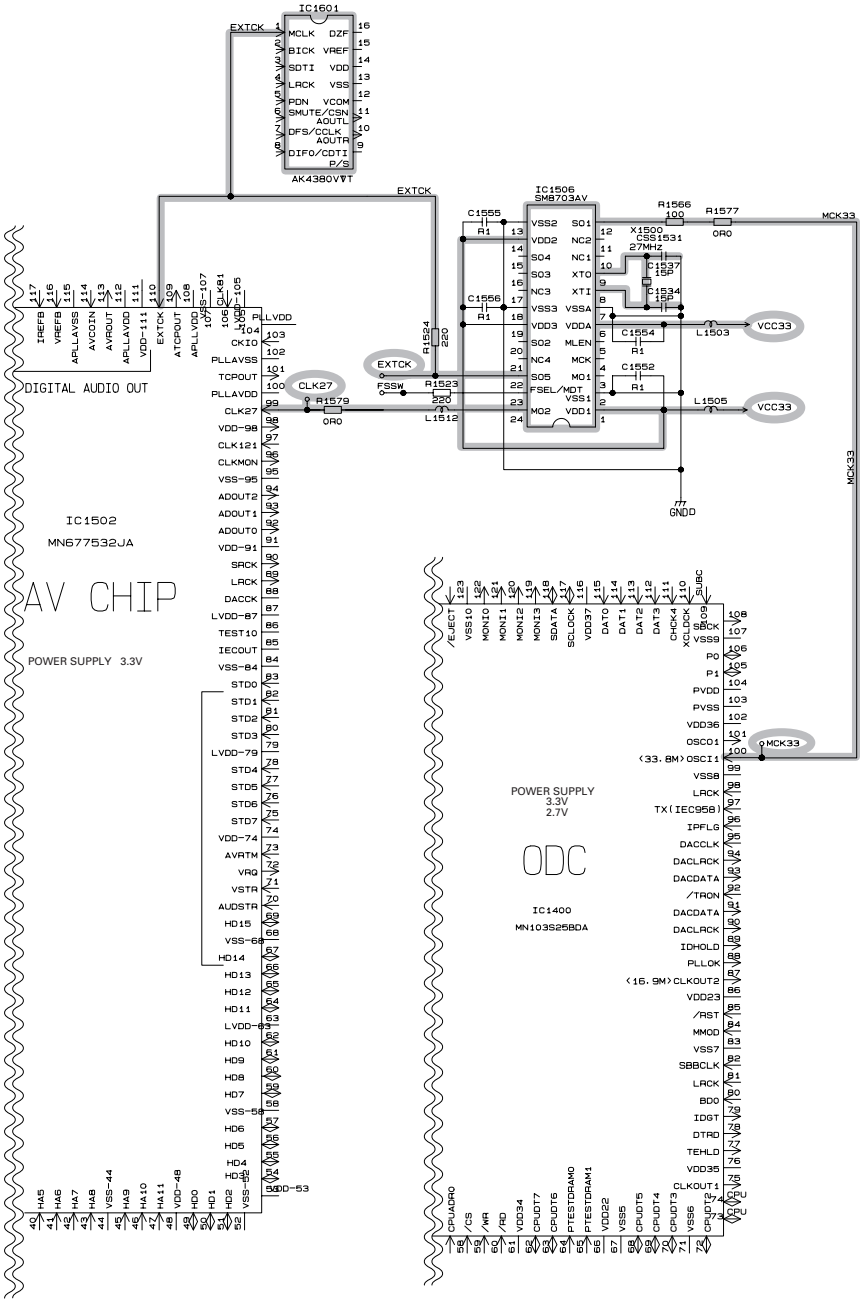


Figure 3: Clock rated values



Schematic diagram ②

Check 3: Is the streaming I/F operating normally?

Reproduce DVD-REF-A1 Title 1.

Verify the circuit described in Figure ③.

This check is the same for all DVD-V compatible modules.

Checks are to be conducted with a GND reference.

If the locations listed under "verification location 2" can be verified, then there is no need to conduct verifications for the locations listed under "verification location 1."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in areas where a problem occurs, for the overall sequence of “output " input" of the checked location.

NO.	Verification location 1 (contact measurements)	Verification location 2	Verification Media	Rated value 1	Rated value 2	Reference waveform	Others
1	STD0	IC1502 83pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD6 at R1401
2	STD1	IC1502 82pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD9 at R1401
3	STD2	IC1502 81pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD10 at R1401
4	STD3	IC1502 80pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD11 at R1401
5	STD4	IC1502 78pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD12 at R1401
6	STD5	IC1502 77pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD13 at R1401
7	STD6	IC1502 76pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD14 at R1401
8	STD7	IC1502 75pin	DVD	2V~VCC33	GND~0.8V	Waveform 1	Line name OHDD15 at R1401
9	AVRTM	IC1502 73pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name O/IOWR
10	STCLK	IC1502 71pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name ODA2
11	STVALID	IC1502 70pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name O/INTRO
12	MASTER	IC1400 24pin	DVD	2V~VCC33	GND~0.8V	Waveform 2	Line name STENABLE

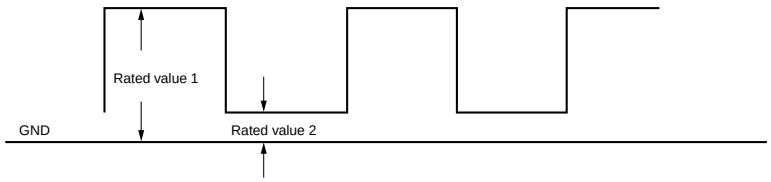
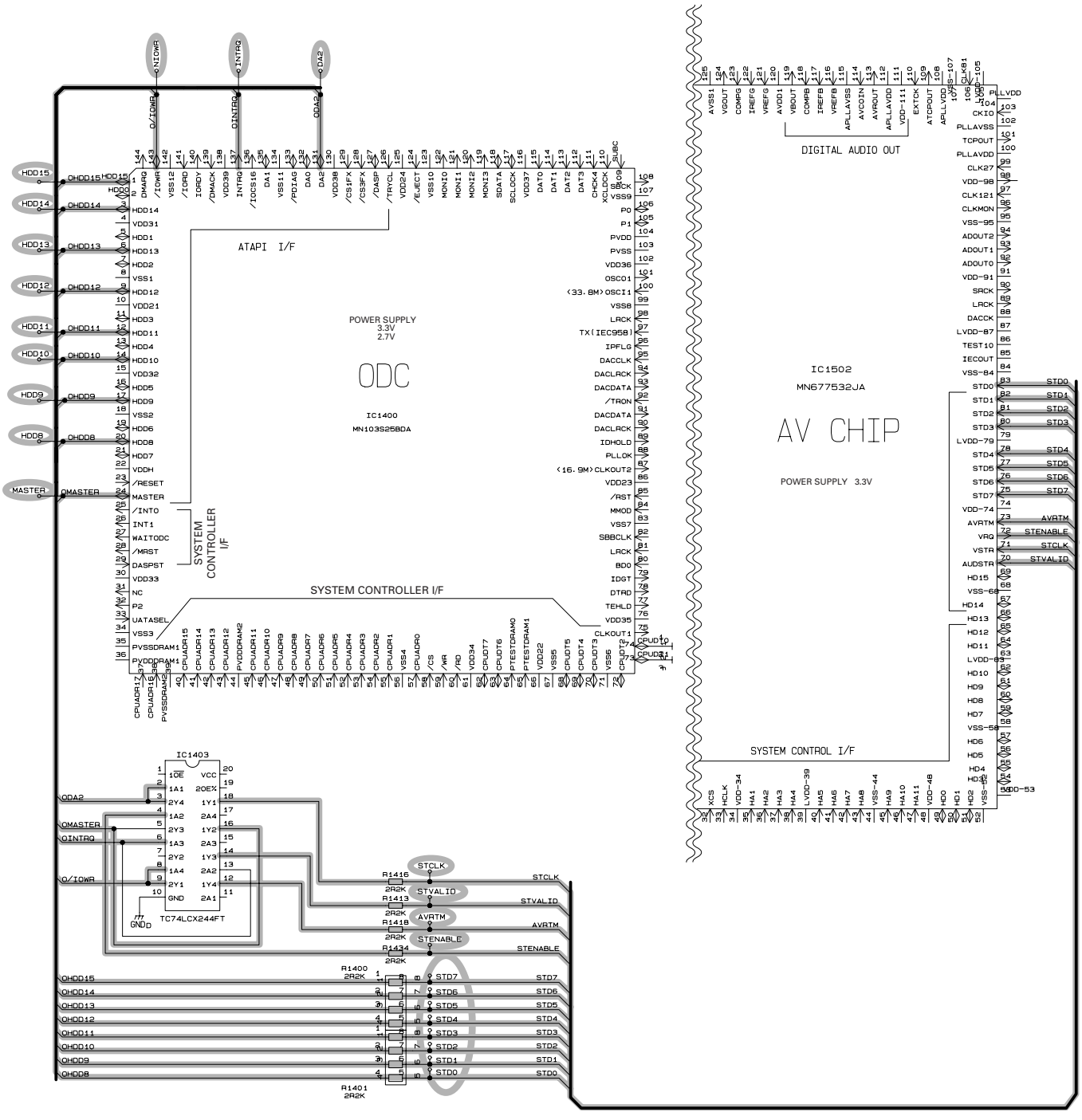


Figure 5: Streaming I/F rated value



Schematic diagram ③

Check 4: Is the audio circuit operating normally?

Reproduce DVD-REF-A1 Title 2 Chapter (48V/16-bit/1 kHz/0dB). Verify the circuit described in Figure 2.
This check is the same for all DVD-V compatible modules.
Checks are to be conducted using GNDAU1 (sensing pins) as a reference.
If the locations, listed under "verification location 2", can be verified, there is no need to conduct verifications for the locations listed under "verification location 1."
If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in the vicinity of the main components (the section marked ④ in the circuit diagram circuit diagram).

NO.	Verification location 1	Verification location 2	Rated value 1	Rated value 2	Reference waveform
1	AOUT0	IC1601 pin-3 For CXK6113, include also CN1701 pin-37	2.2V and over	0.8V and lower	Waveform 3
2	SRCKAV	IC1601 pin-2 For CXK6113, include also CN1701 pin-38	2.2V and over	0.8V and lower	Waveform 3
4	LRCKAV	IC1701 pin-4 CXK6113, include also CN1701 pin-36	2.2V and over	0.8V and lower	Waveform 3

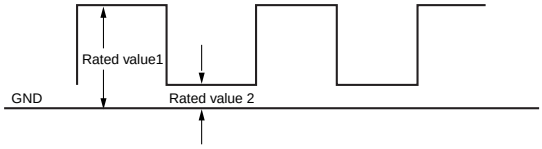


Figure 7: Three serial output rated values

Checks are conducted with the measurement circuit below.

NO.	Verification location 1	Verification location 2	Rated value	Reference waveform
4	LO	CN1701 15pin	1120±150mV	Waveform 4
5	RO	CN1702 12pin	1120±150mV	Waveform 4

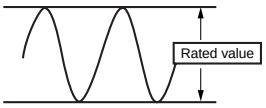


Figure 8: Analog audio outputs (LO and RO) rated values

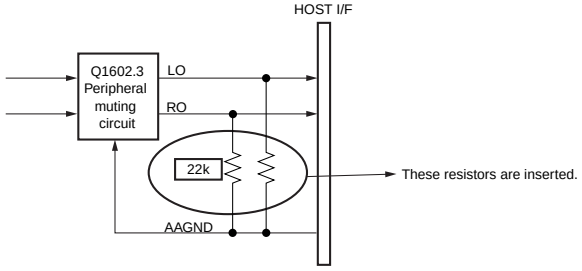
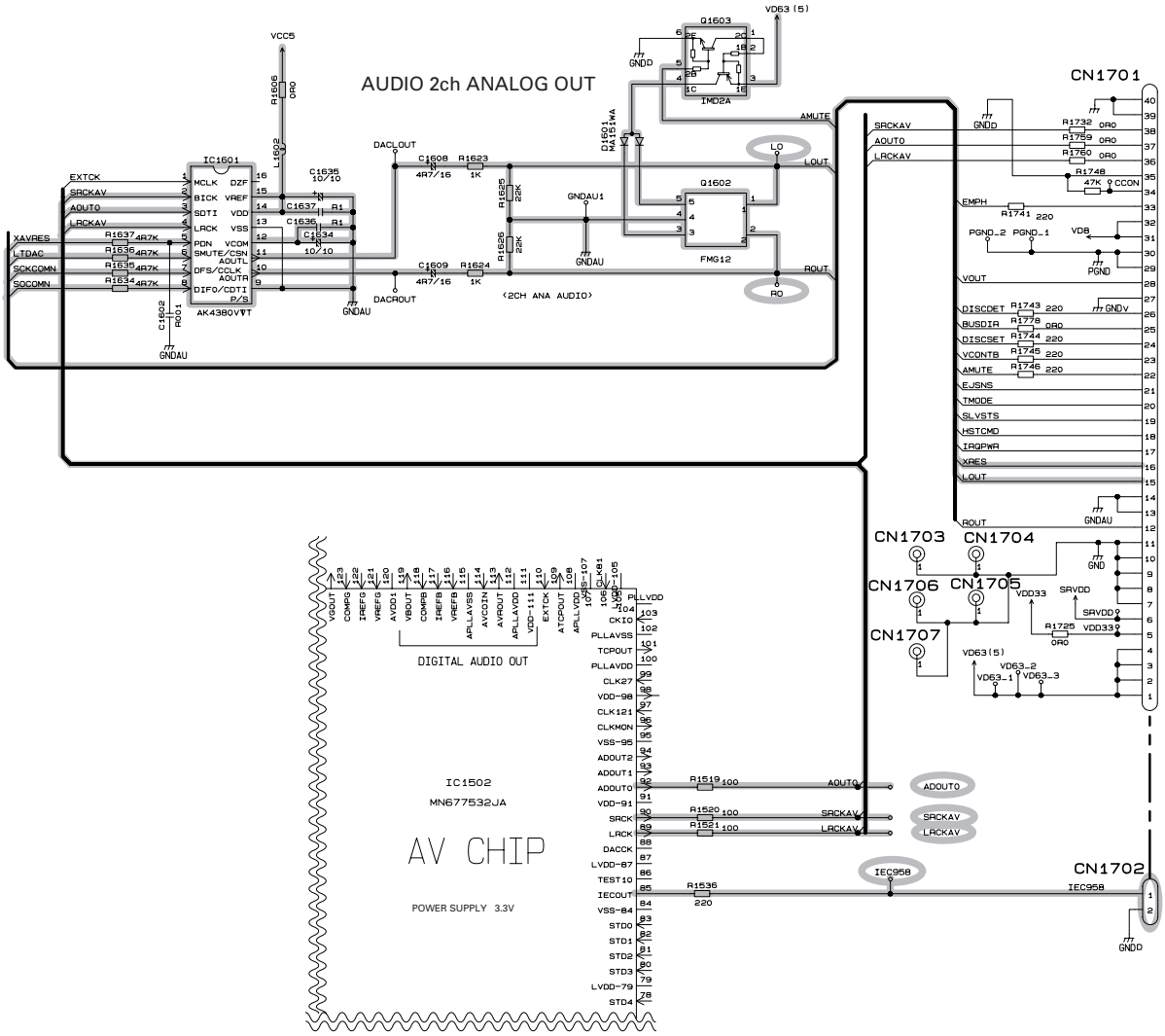


Figure 9: LO and RO output measurement circuit

NO.	Verification location 1	Verification location 2	Rated value 1	Rated value 2	Reference waveform
6	IEC958	CN1702 2pin	2.2V and over	0.8V and lower	Waveform 5



Schematic diagram ④

Check 5: Is the video circuit operated normally?

Reproduce DVD-REF-A1 Title 2 Chapters (White 100IRE).
Monitor the output with the oscilloscope, by setting the COMPO signal to a GND reference.
Set the Trigger mode to the TV trigger, and the Trigger line to line-150.

NO.	Verification location (sensing pin)	Rated value	Reference waveform
1	COMPO	1.0±0.02Vpp	Waveform 6

If the result is not satisfactory, check to see if there are any problems with resin flux cored solder, parts and components, in the vicinity of line-150 (the section marked ⑤ in the circuit diagram) and peripheral components

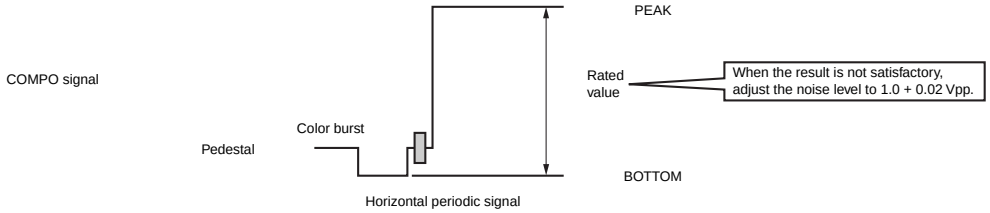
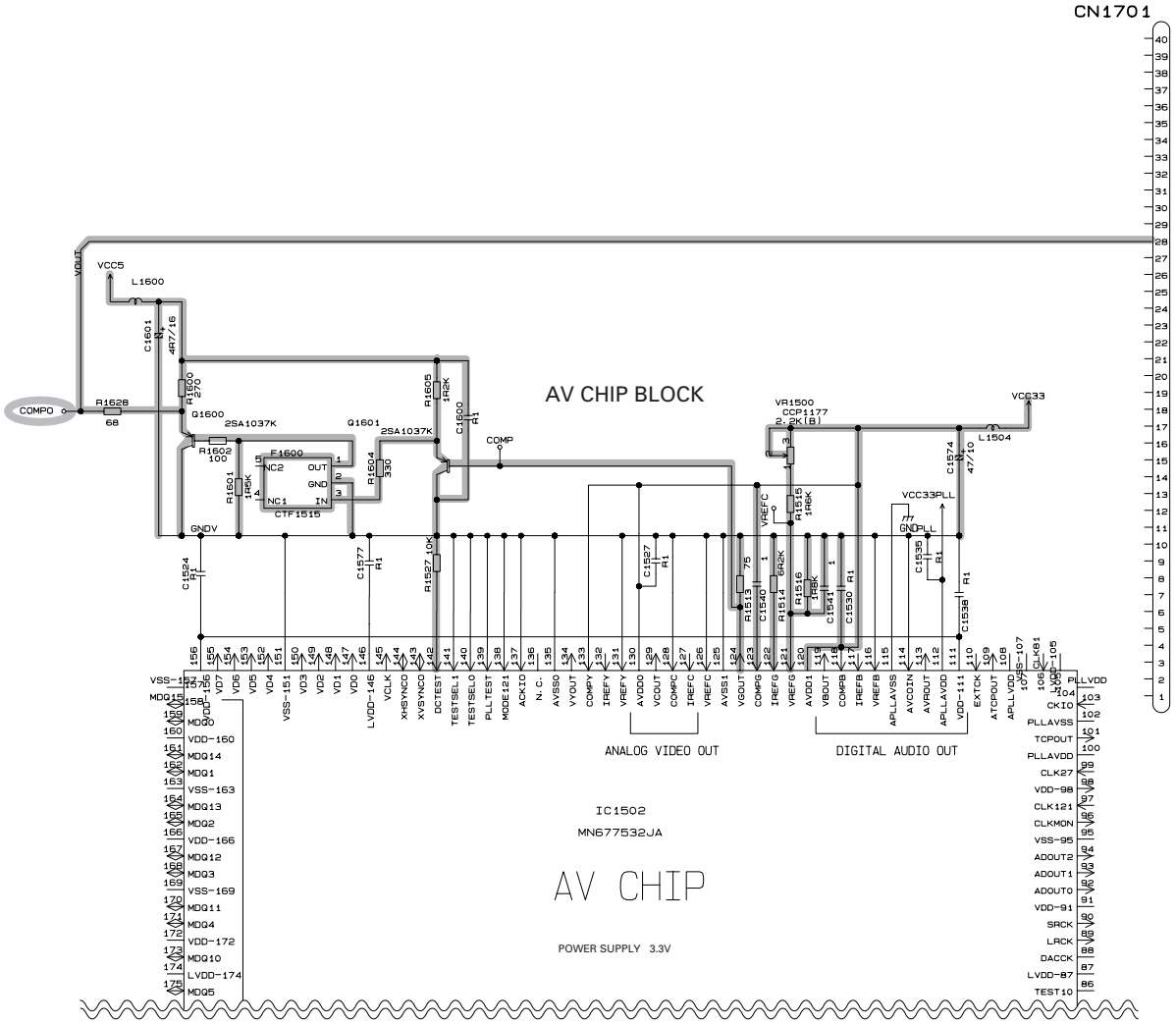


Figure 11: Composite signal 100% output waveform

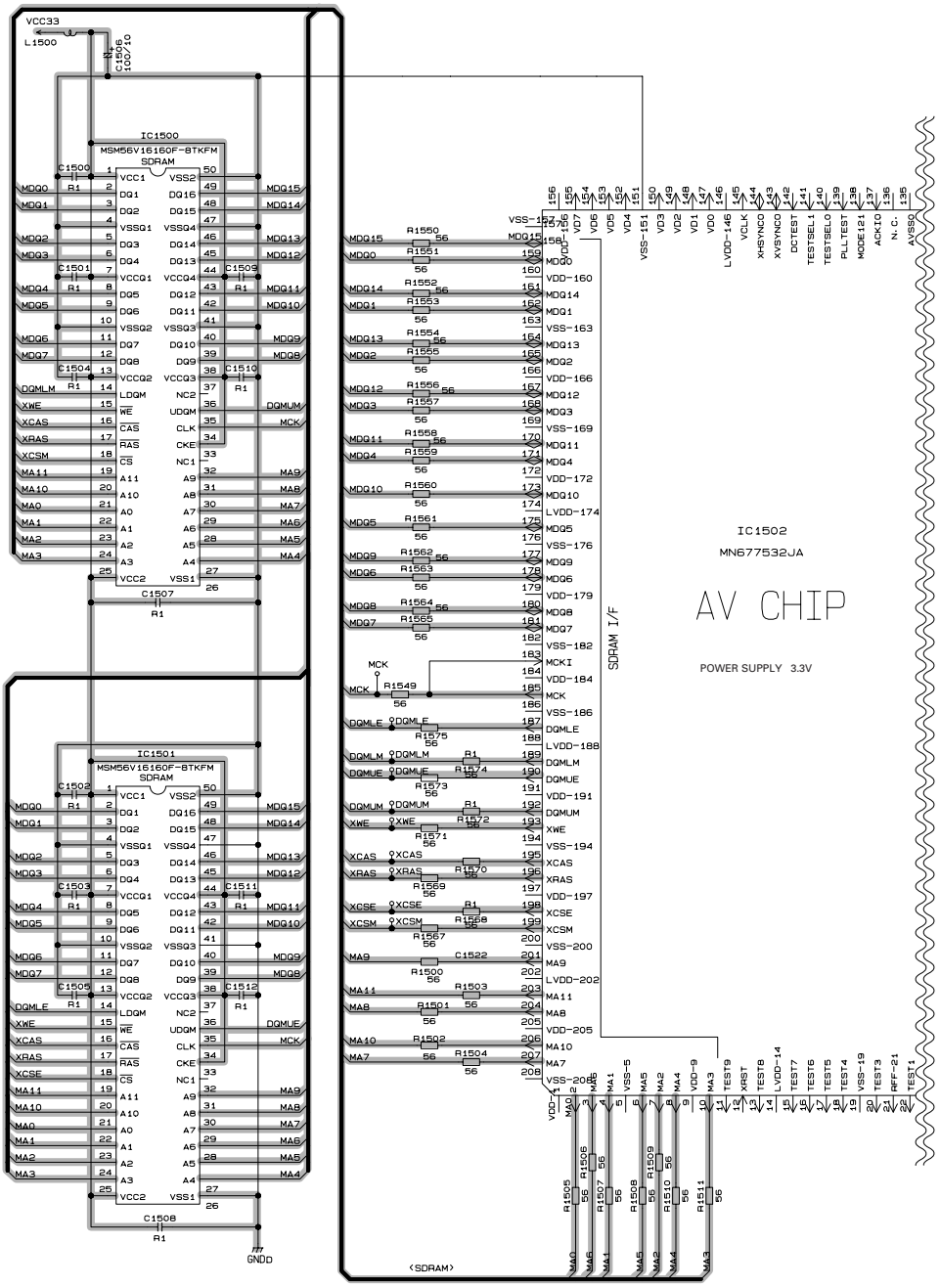


Schematic diagram ⑤

Check 6: Is SDRAM I/F operating normally?

Reproduce DVD-REF-A1 Title 1.
Verify the circuit described in Figure ⑥.
This check is the same for all DVD-V compatible modules.
Check the conductivity of both the "Verification location 1" and the "Verification location2."
If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in areas where a problem occurs, for the overall sequence of “output " input" of the checked location.

NO.	Signal name	Verification location 1	Verification location 2	Rated value	Others
1	MA0	IC1500/1501 21pin	IC1502 2pin	56Ω ± 5%	Same for both IC1500 and IC1501.
2	MA1	IC1500/1501 22pin	IC1502 4pin	56Ω ± 5%	Same for both IC1500 and IC1501.
3	MA2	IC1500/1501 23pin	IC1502 7pin	56Ω ± 5%	Same for both IC1500 and IC1501.
4	MA3	IC1500/1501 24pin	IC1502 10pin	56Ω ± 5%	Same for both IC1500 and IC1501.
5	MA4	IC1500/1501 27pin	IC1502 8pin	56Ω ± 5%	Same for both IC1500 and IC1501.
6	MA5	IC1500/1501 28pin	IC1502 6pin	56Ω ± 5%	Same for both IC1500 and IC1501.
7	MA6	IC1500/1501 29pin	IC1502 3pin	56Ω ± 5%	Same for both IC1500 and IC1501.
8	MA7	IC1500/1501 30pin	IC1502 207pin	56Ω ± 5%	Same for both IC1500 and IC1501.
9	MA8	IC1500/1501 31pin	IC1502 204pin	56Ω ± 5%	Same for both IC1500 and IC1501.
10	MA9	IC1500/1501 32pin	IC1502 201pin	56Ω ± 5%	Same for both IC1500 and IC1501.
11	MA10	IC1500/1501 20pin	IC1502 206pin	56Ω ± 5%	Same for both IC1500 and IC1501.
12	MA11	IC1500/1501 19pin	IC1502 203pin	56Ω ± 5%	Same for both IC1500 and IC1501.
13	MDQ0	IC1500/1501 2pin	IC1502 159pin	56Ω ± 5%	Same for both IC1500 and IC1501.
14	MDQ1	IC1500/1501 3pin	IC1502 162pin	56Ω ± 5%	Same for both IC1500 and IC1501.
15	MDQ2	IC1500/1501 5pin	IC1502 165pin	56Ω ± 5%	Same for both IC1500 and IC1501.
16	MDQ3	IC1500/1501 6pin	IC1502 168pin	56Ω ± 5%	Same for both IC1500 and IC1501.
17	MDQ4	IC1500/1501 8pin	IC1502 171pin	56Ω ± 5%	Same for both IC1500 and IC1501.
18	MDQ5	IC1500/1501 9pin	IC1502 175pin	56Ω ± 5%	Same for both IC1500 and IC1501.
19	MDQ6	IC1500/1501 11pin	IC1502 178pin	56Ω ± 5%	Same for both IC1500 and IC1501.
20	MDQ7	IC1500/1501 12pin	IC1502 181pin	56Ω ± 5%	Same for both IC1500 and IC1501.
21	MDQ8	IC1500/1501 39pin	IC1502 180pin	56Ω ± 5%	Same for both IC1500 and IC1501.
22	MDQ9	IC1500/1501 40pin	IC1502 177pin	56Ω ± 5%	Same for both IC1500 and IC1501.
23	MDQ10	IC1500/1501 42pin	IC1502 173pin	56Ω ± 5%	Same for both IC1500 and IC1501.
24	MDQ11	IC1500/1501 43pin	IC1502 170pin	56Ω ± 5%	Same for both IC1500 and IC1501.
25	MDQ12	IC1500/1501 45pin	IC1502 167pin	56Ω ± 5%	Same for both IC1500 and IC1501.
26	MDQ13	IC1500/1501 46pin	IC1502 164pin	56Ω ± 5%	Same for both IC1500 and IC1501.
27	MDQ14	IC1500/1501 48pin	IC1502 161pin	56Ω ± 5%	Same for both IC1500 and IC1501.
28	MDQ15	IC1500/1501 49pin	IC1502 158pin	56Ω ± 5%	Same for both IC1500 and IC1501.
29	MCK	IC1500/1501 35pin	IC1502 185pin	56Ω ± 5%	Same for both IC1500 and IC1501.
30	XWE	IC1500/1501 15pin	IC1502 193pin	56Ω ± 5%	Same for both IC1500 and IC1501.
31	XCAS	IC1500/1501 16pin	IC1502 195pin	56Ω ± 5%	Same for both IC1500 and IC1501.
32	XRAS	IC1500/1501 17pin	IC1502 196pin	56Ω ± 5%	Same for both IC1500 and IC1501.
33	XCSM	IC1500 18pin	IC1502 199pin	56Ω ± 5%	Same for both IC1500 and IC1501.
34	XCSE	IC1501 18pin	IC1502 198pin	56Ω ± 5%	
35	DQMUM	IC1500 14pin	IC1502 192pin	56Ω ± 5%	
36	DQMLM	IC1500 36pin	IC1502 189pin	56Ω ± 5%	
37	DQMUE	IC1500 14pin	IC1502 190pin	56Ω ± 5%	
38	DQMLE	IC1500 36pin	IC1502 187pin	56Ω ± 5%	



Schematic diagram ⑥

Check 7: Is the microprocessor operating normally?

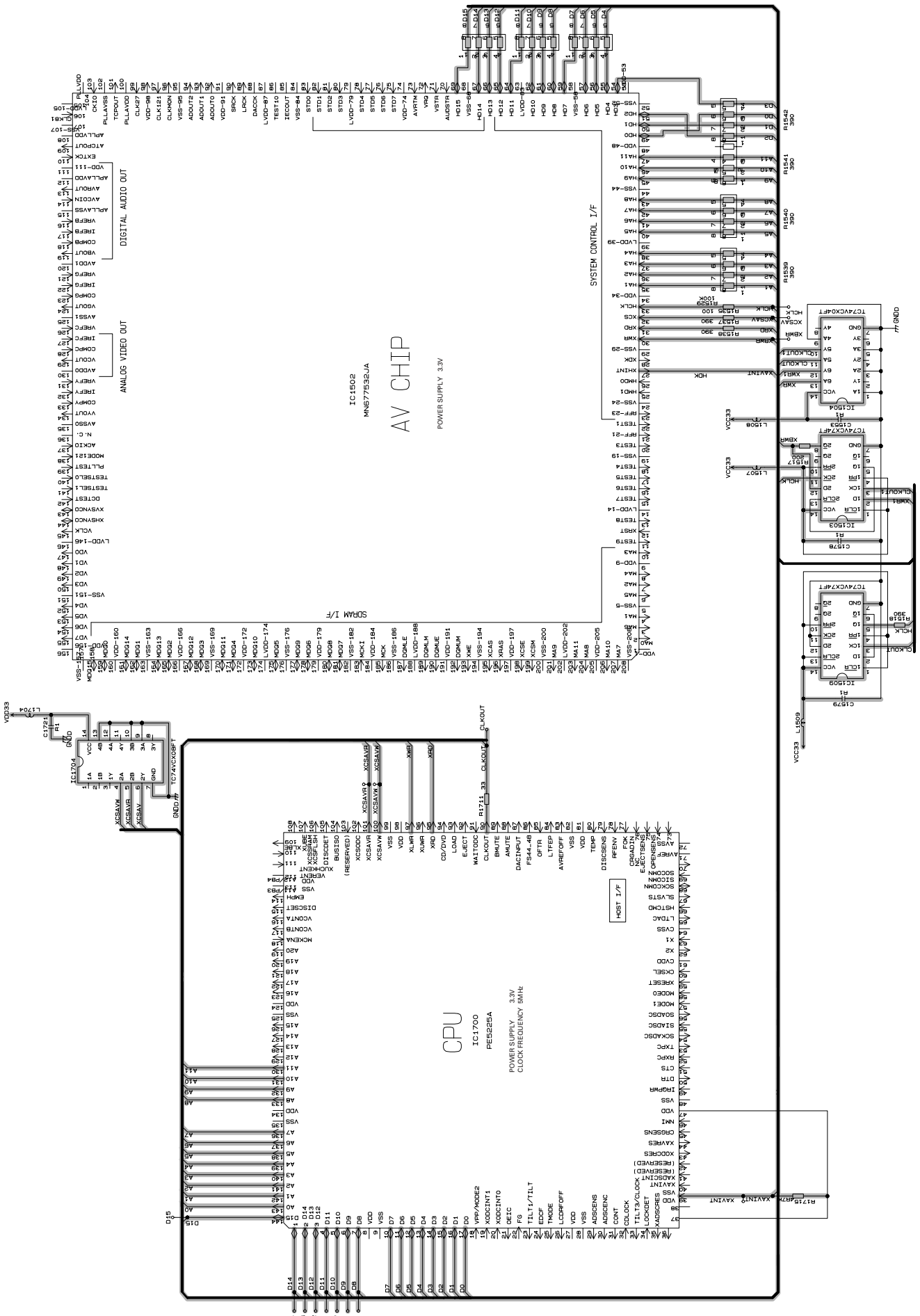
Verify the circuit described in Figure ⑦.

This check is the same for all DVD-V compatible modules.

Check the conductivity of both the "Verification location 1" and the "Verification location2."

If the result is not satisfactory, check to see if there are any problems with the resin flux cored solder, parts and components, in areas where a problem occurs, for the overall sequence of "output – input" of the checked location.

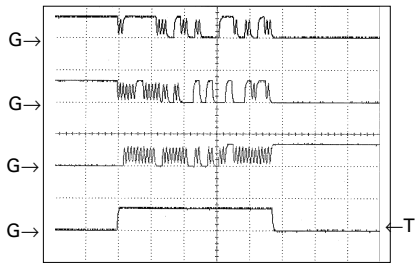
NO.	Signal name	Verification location 1	Verification location 2	Verification Media	Rated value	Others
1	A1	IC1700 142pin	IC1502 35pin	ALL	390Ω ± 5%	
2	A2	IC1700 141pin	IC1502 36pin	ALL	390Ω ± 5%	
3	A3	IC1700 140pin	IC1502 37pin	ALL	390Ω ± 5%	
4	A4	IC1700 139pin	IC1502 38pin	ALL	390Ω ± 5%	
5	A5	IC1700 138pin	IC1502 40pin	ALL	390Ω ± 5%	
6	A6	IC1700 137pin	IC1502 41pin	ALL	390Ω ± 5%	
7	A7	IC1700 136pin	IC1502 42pin	ALL	390Ω ± 5%	
8	A8	IC1700 133pin	IC1502 43pin	ALL	390Ω ± 5%	
9	A9	IC1700 132pin	IC1502 45pin	ALL	390Ω ± 5%	
10	A10	IC1700 131pin	IC1502 46pin	ALL	390Ω ± 5%	
11	A11	IC1700 130pin	IC1502 47pin	ALL	390Ω ± 5%	
12	D0	IC1700 17pin	IC1502 49pin	ALL	390Ω ± 5%	
13	D1	IC1700 16pin	IC1502 50pin	ALL	390Ω ± 5%	
14	D2	IC1700 15pin	IC1502 51pin	ALL	390Ω ± 5%	
15	D3	IC1700 14pin	IC1502 54pin	ALL	390Ω ± 5%	
16	D4	IC1700 13pin	IC1502 55pin	ALL	390Ω ± 5%	
17	D5	IC1700 12pin	IC1502 56pin	ALL	390Ω ± 5%	
18	D6	IC1700 11pin	IC1502 57pin	ALL	390Ω ± 5%	
19	D7	IC1700 10pin	IC1502 59pin	ALL	390Ω ± 5%	
20	D8	IC1700 7pin	IC1502 60pin	ALL	390Ω ± 5%	
21	D9	IC1700 6pin	IC1502 61pin	ALL	390Ω ± 5%	
22	D10	IC1700 5pin	IC1502 62pin	ALL	390Ω ± 5%	
23	D11	IC1700 4pin	IC1502 64pin	ALL	390Ω ± 5%	
24	D12	IC1700 3pin	IC1502 65pin	ALL	390Ω ± 5%	
25	D13	IC1700 2pin	IC1502 66pin	ALL	390Ω ± 5%	
26	D14	IC1700 1pin	IC1502 67pin	ALL	390Ω ± 5%	
27	D15	IC1700 144pin	IC1502 69pin	ALL	390Ω ± 5%	
28	XCSAVR	IC1700 101pin	IC1704 5pin	ALL	0Ω	
29	XCSAVW	IC1700 100pin	IC1704 4pin	ALL	0Ω	
30	XCSAV	IC1704 6pin	IC1502 32pin	ALL	390Ω ± 5%	
31	XAVINT	IC1700 39pin	IC1502 27pin	ALL	0Ω	
32	XRD	IC1700 95pin	IC1502 31pin	ALL	390Ω ± 5%	
33	CLKOUT	IC1700 90pin	IC1509 3pin	ALL	33Ω	Dividing circuit For verification location 1, include also IC1054 pin-11
34	HCLK	IC1509 5pin	IC1502 33pin	ALL	200Ω ± 5%	
35	XWR	IC1700 97pin	IC1504 13pin	ALL	0Ω	
36	XBWR	IC1503 8pin	IC1502 30pin	ALL	200Ω ± 5%	



Schematic diagram ⑦

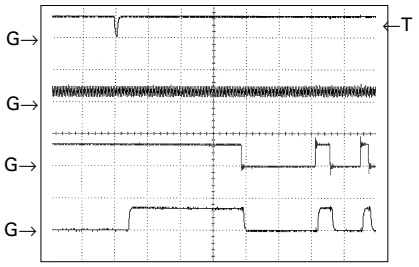
Note:1. The encircled number denote measuring pointes in the circuit diagram.
2. Reference voltage VHALF : 1.65V

⑪ CH1: STD1
⑫ CH2: STD4
⑬ CH3: STD7
⑭ CH4: STENABLE
5V/div. 2µs/div.



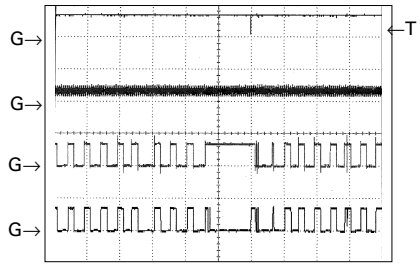
Waveform1

⑮ CH1: AVRTM
⑯ CH2: STCLK
⑰ CH3: STVALID
⑭ CH4: STENABLE
5V/div. 2µs/div.



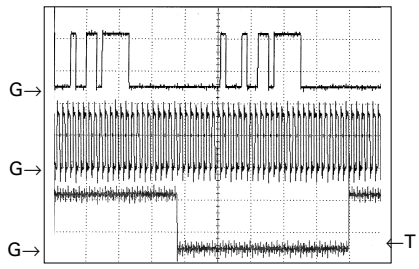
Waveform2(1)

⑮ CH1: AVRTM
⑯ CH2: STCLK
⑰ CH3: STVALID
⑭ CH4: STENABLE
5V/div. 50µs/div.



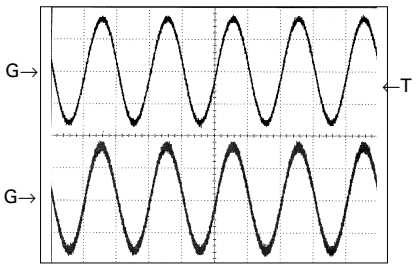
Waveform2(2)

⑱ CH1: AOUT0
⑲ CH2: SRCKAV
⑳ CH3: LRCKAV
2V/div. 2µs/div.



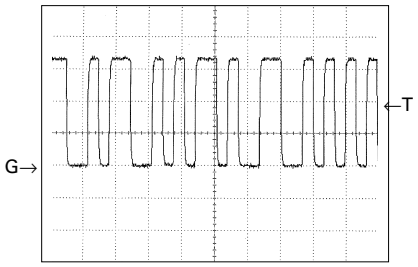
Waveform3

㉒ CH1: LO
㉓ CH2: RO
1V/div. 500µs/div.



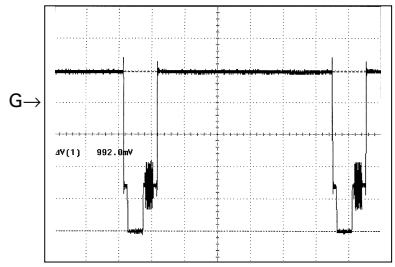
Waveform4

㉑ CH1: IEC958 1V/div. 500ns/div.



Waveform5

㉔ CH1: COMPO 200mV/div. 10µs/div.
[White 100% output]



Waveform6

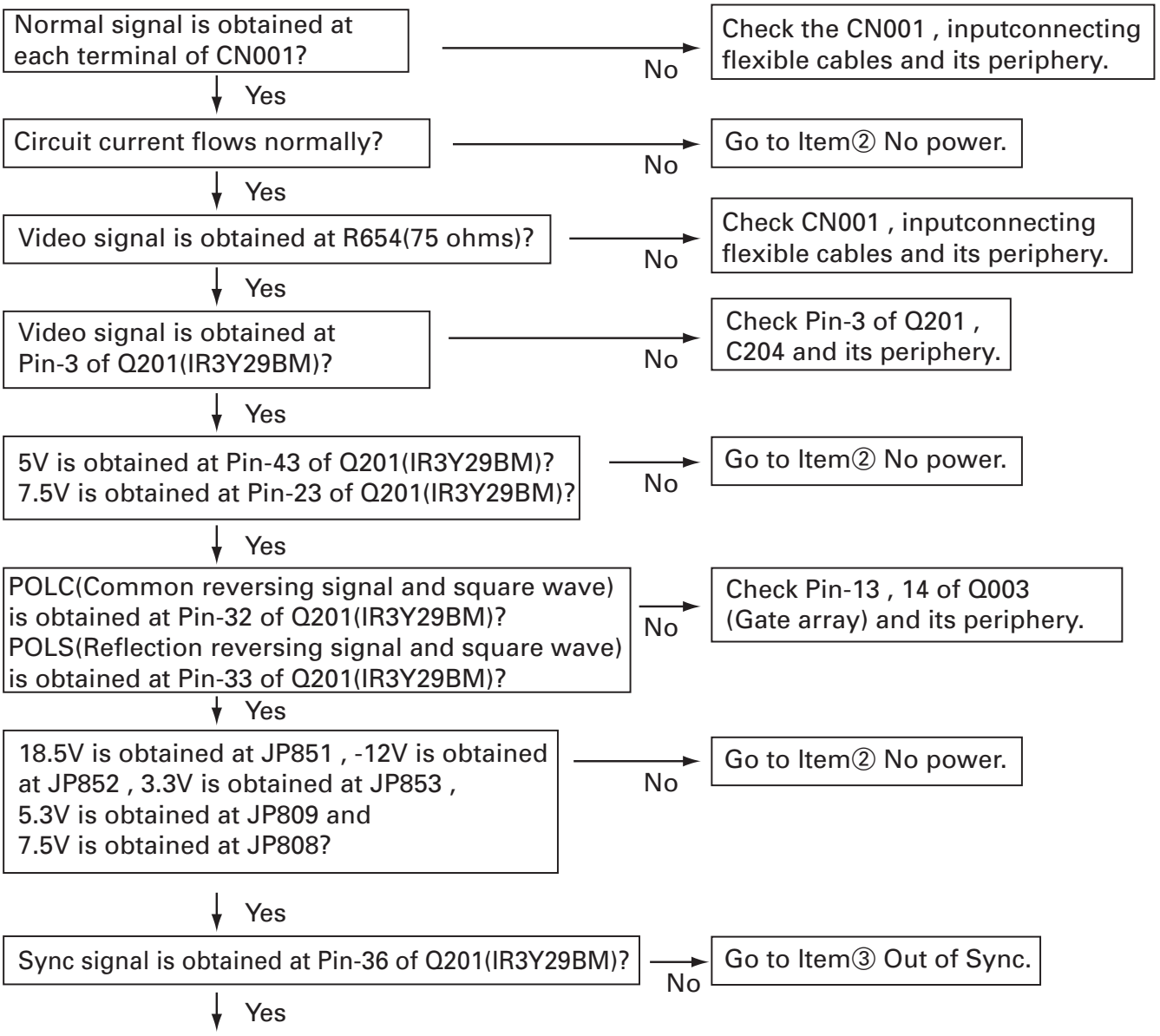
7 GENERAL INFORMATION

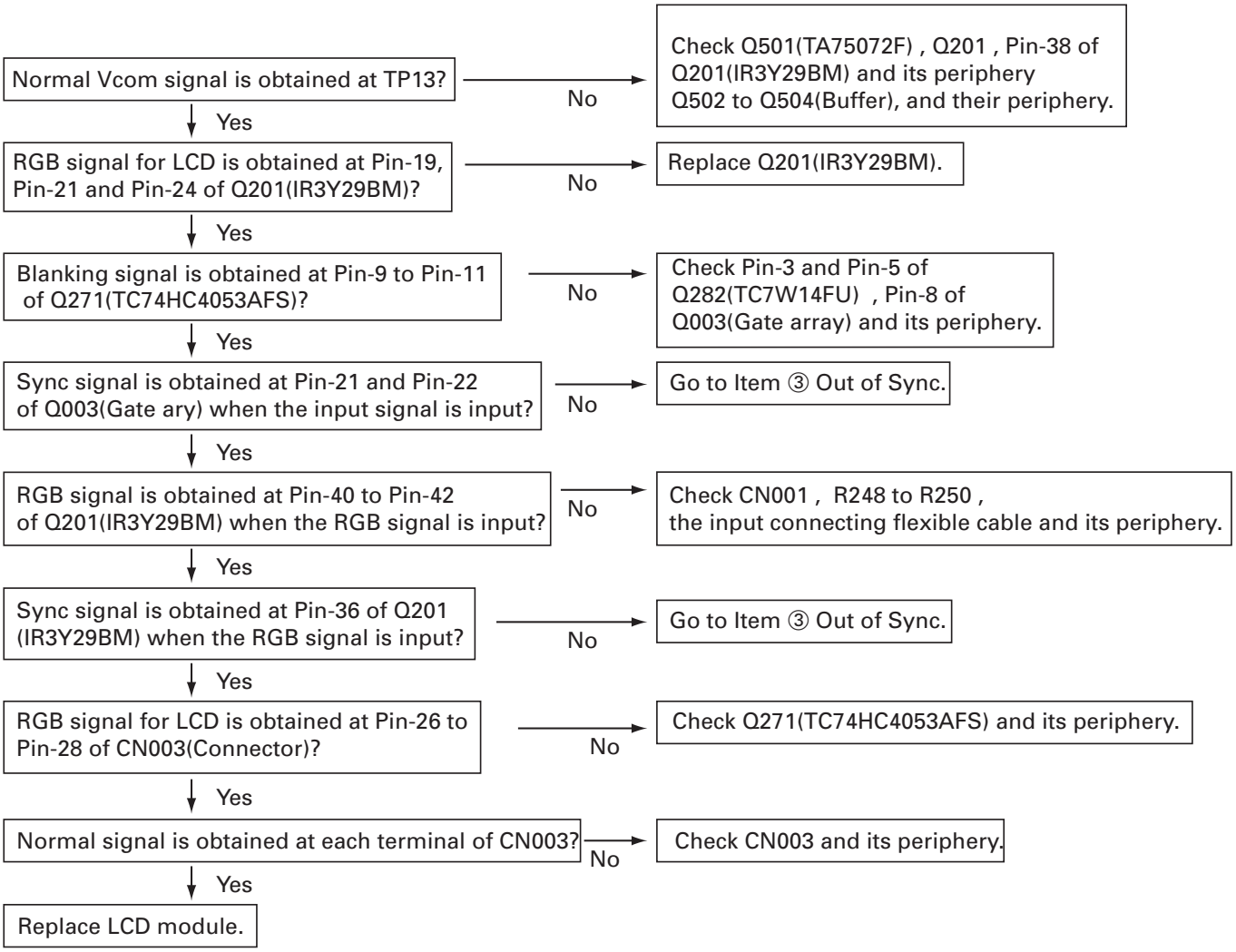
7.1 DIAGNOSIS

7.1.1 TROUBLESHOOTING

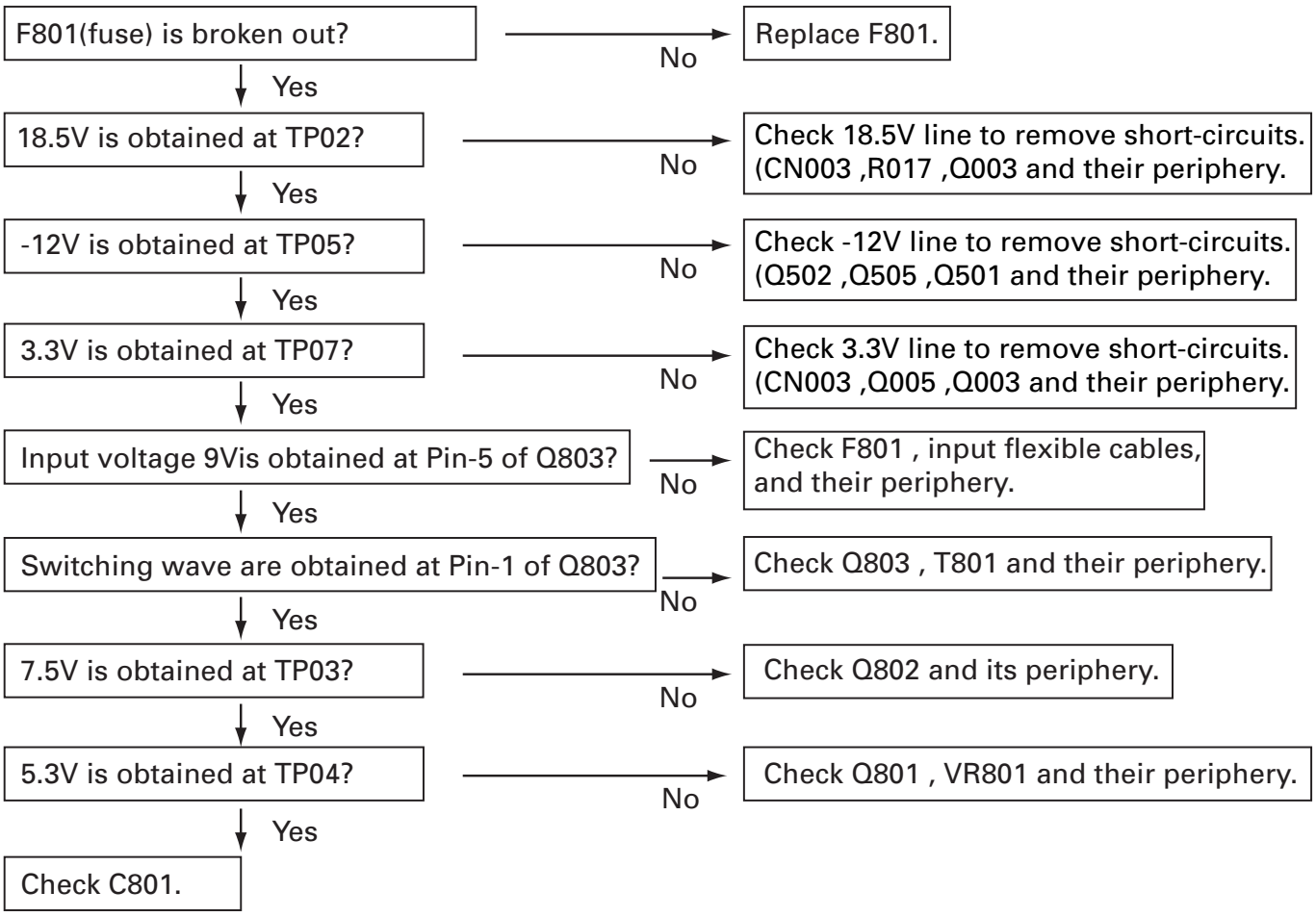
● LCD module troubleshooting

①No images

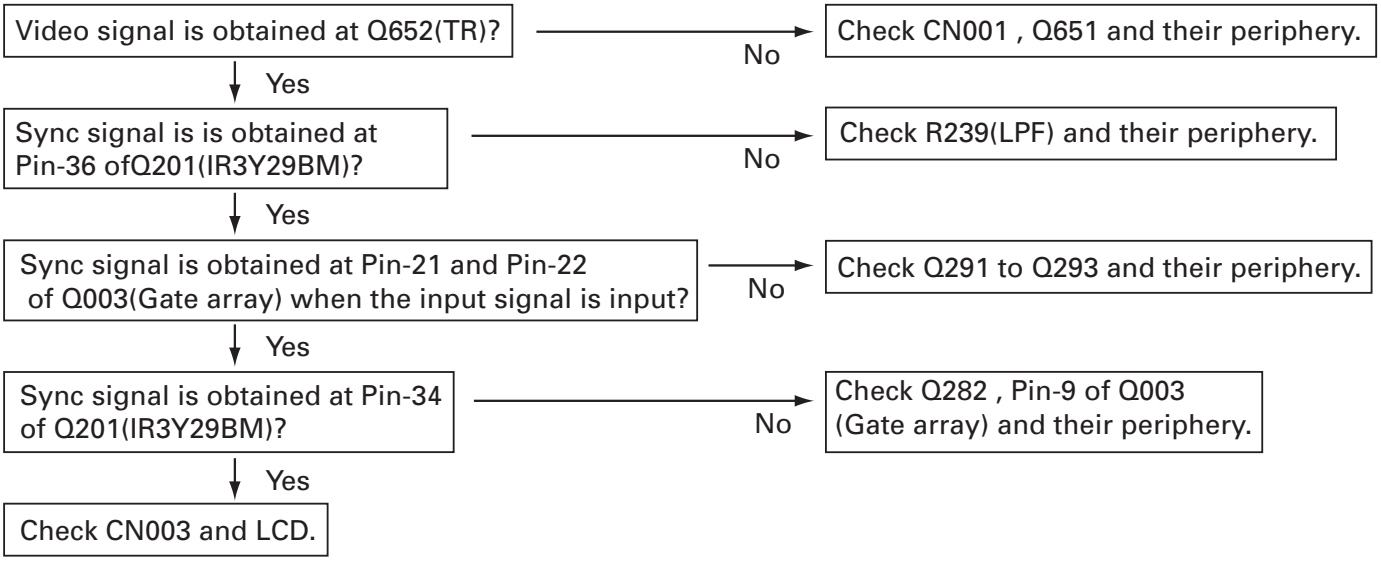

Normal signal is obtained at each terminal of CN001?
No
Check the CN001 , inputconnecting flexible cables and its periphery.
Yes
Circuit current flows normally?
No
Go to Item② No power.
Yes
Video signal is obtained at R654(75 ohms)?
No
Check CN001 , inputconnecting flexible cables and its periphery.
Yes
Video signal is obtained at Pin-3 of Q201(IR3Y29BM)?
No
Check Pin-3 of Q201 , C204 and its periphery.
Yes
5V is obtained at Pin-43 of Q201(IR3Y29BM)?
7.5V is obtained at Pin-23 of Q201(IR3Y29BM)?
No
Go to Item② No power.
Yes
POLC(Common reversing signal and square wave) is obtained at Pin-32 of Q201(IR3Y29BM)?
POLS(Reflection reversing signal and square wave) is obtained at Pin-33 of Q201(IR3Y29BM)?
No
Check Pin-13 , 14 of Q003 (Gate array) and its periphery.
Yes
18.5V is obtained at JP851 , -12V is obtained at JP852 , 3.3V is obtained at JP853 ,
5.3V is obtained at JP809 and
7.5V is obtained at JP808?
No
Go to Item② No power.
Yes
Sync signal is obtained at Pin-36 of Q201(IR3Y29BM)?
No
Go to Item③ Out of Sync.
Yes


Normal Vcom signal is obtained at TP13?
No
Check Q501(TA75072F) , Q201 , Pin-38 of Q201(IR3Y29BM) and its periphery Q502 to Q504(Buffer), and their periphery.
Yes
RGB signal for LCD is obtained at Pin-19, Pin-21 and Pin-24 of Q201(IR3Y29BM)?
No
Replace Q201(IR3Y29BM).
Yes
Blanking signal is obtained at Pin-9 to Pin-11 of Q271(TC74HC4053AFS)?
No
Check Pin-3 and Pin-5 of Q282(TC7W14FU) , Pin-8 of Q003(Gate array) and its periphery.
Yes
Sync signal is obtained at Pin-21 and Pin-22 of Q003(Gate ary) when the input signal is input?
No
Go to Item ③ Out of Sync.
Yes
RGB signal is obtained at Pin-40 to Pin-42 of Q201(IR3Y29BM) when the RGB signal is input?
No
Check CN001 , R248 to R250 , the input connecting flexible cable and its periphery.
Yes
Sync signal is obtained at Pin-36 of Q201 (IR3Y29BM) when the RGB signal is input?
No
Go to Item ③ Out of Sync.
Yes
RGB signal for LCD is obtained at Pin-26 to Pin-28 of CN003(Connector)?
No
Check Q271(TC74HC4053AFS) and its periphery.
Yes
Normal signal is obtained at each terminal of CN003?
No
Check CN003 and its periphery.
Yes
Replace LCD module.

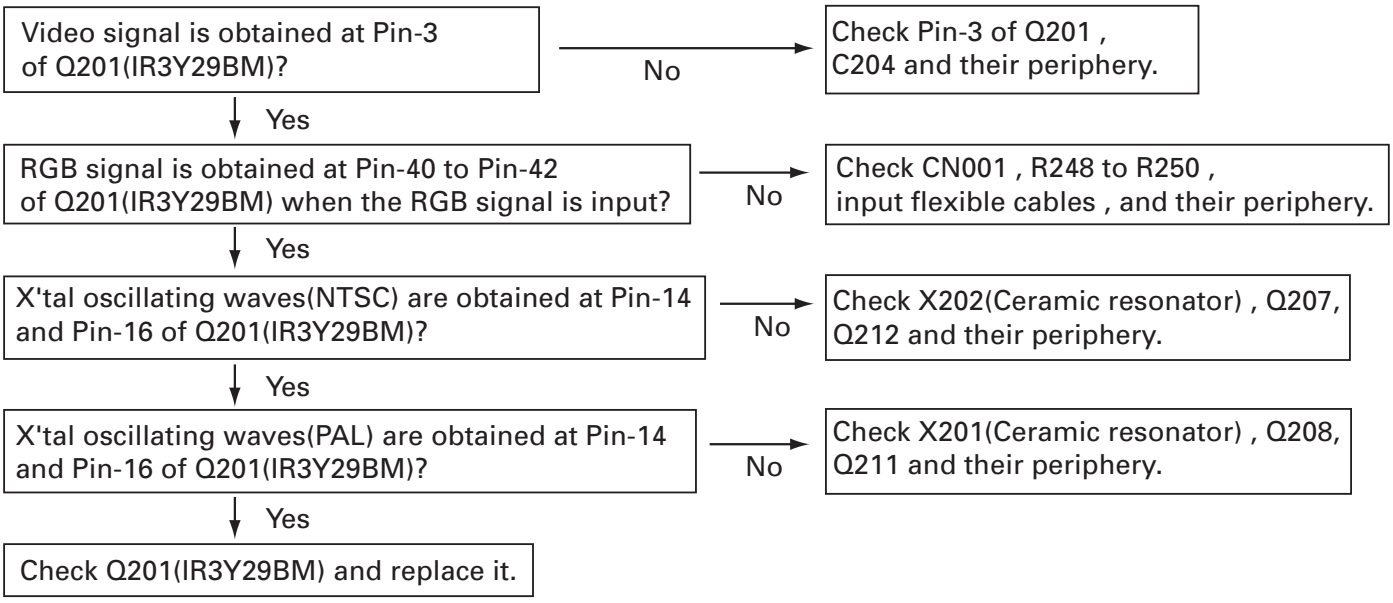
②No power


F801(fuse) is broken out?
No
Replace F801.
Yes
18.5V is obtained at TP02?
No
Check 18.5V line to remove short-circuits.
(CN003 ,R017 ,Q003 and their periphery.
Yes
-12V is obtained at TP05?
No
Check -12V line to remove short-circuits.
(Q502 ,Q505 ,Q501 and their periphery.
Yes
3.3V is obtained at TP07?
No
Check 3.3V line to remove short-circuits.
(CN003 ,Q005 ,Q003 and their periphery.
Yes
Input voltage 9Vis obtained at Pin-5 of Q803?
No
Check F801 , input flexible cables,
and their periphery.
Yes
Switching wave are obtained at Pin-1 of Q803?
No
Check Q803 , T801 and their periphery.
Yes
7.5V is obtained at TP03?
No
Check Q802 and its periphery.
Yes
5.3V is obtained at TP04?
No
Check Q801 , VR801 and their periphery.
Yes
Check C801.

③Out of Sync


Video signal is obtained at Q652(TR)?
No
Check CN001 , Q651 and their periphery.
Yes
Sync signal is is obtained at Pin-36 ofQ201(IR3Y29BM)?
No
Check R239(LPF) and their periphery.
Yes
Sync signal is obtained at Pin-21 and Pin-22 of Q003(Gate array) when the input signal is input?
No
Check Q291 to Q293 and their periphery.
Yes
Sync signal is obtained at Pin-34 of Q201(IR3Y29BM)?
No
Check Q282 , Pin-9 of Q003 (Gate array) and their periphery.
Yes
Check CN003 and LCD.

④No color


Video signal is obtained at Pin-3 of Q201(IR3Y29BM)?
No
Check Pin-3 of Q201 , C204 and their periphery.
Yes
RGB signal is obtained at Pin-40 to Pin-42 of Q201(IR3Y29BM) when the RGB signal is input?
No
Check CN001 , R248 to R250 , input flexible cables , and their periphery.
Yes
X'tal oscillating waves(NTSC) are obtained at Pin-14 and Pin-16 of Q201(IR3Y29BM)?
No
Check X202(Ceramic resonator) , Q207, Q212 and their periphery.
Yes
X'tal oscillating waves(PAL) are obtained at Pin-14 and Pin-16 of Q201(IR3Y29BM)?
No
Check X201(Ceramic resonator) , Q208, Q211 and their periphery.
Yes
Check Q201(IR3Y29BM) and replace it.

7.1.2 DISASSEMBLY

● Cautions for disassembling and reassembling

1. When pulling chassis and case unit apart, remove gear, remove five screws, and then remove set of shaft unit before sliding case unit out. When reassembling, the switch on the SW PCB become caught by the parts, so keep the two screws of A as well as the SW PCB removed while reinstalling the case unit.

2. When reinstalling the shaft unit, please make sure that the teeth on the right and left side are aligned properly.

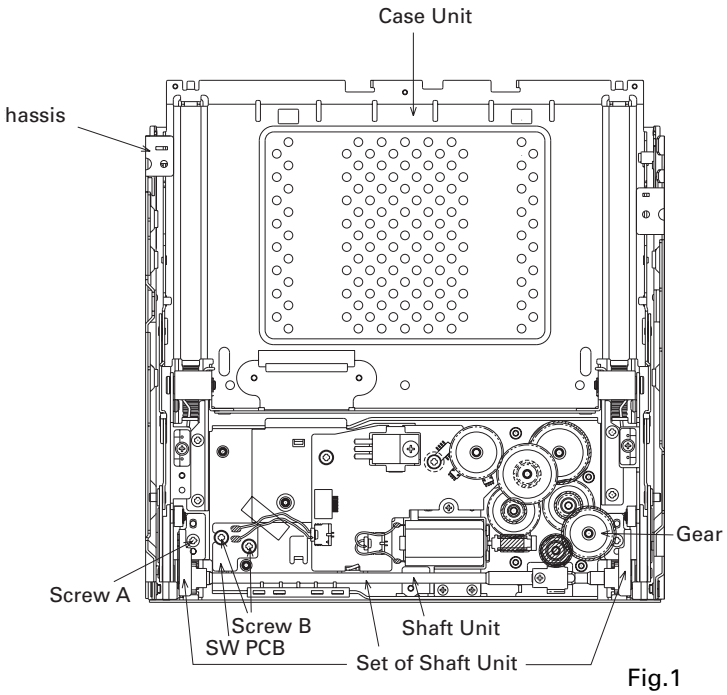


Fig.1

3. Please do not attempt to operate the drive mechanism when the grill is not attached (as doing so can cause the guides A and B to be caught by the edge of the chassis, resulting in damage to these parts).
4. Please remember to reapply grease on applicable parts, when servicing gears and related parts.
Gears : GEM1013(Gear)
GGM1034(Rack and all boards)

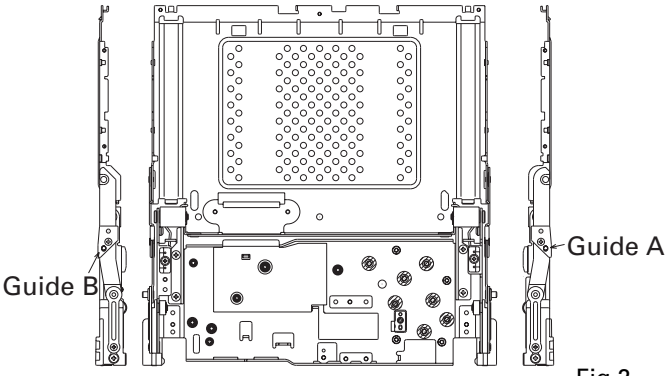


Fig.2

5. Please be careful, when reassembling the frame that the chassis is not spread open too widely.
Further, please be careful that damage or scratches to the monitor or grill does not occur (it may be advisable to apply protective tapes on these parts, making sure that the tape does not hinder the drive mechanism's operation).

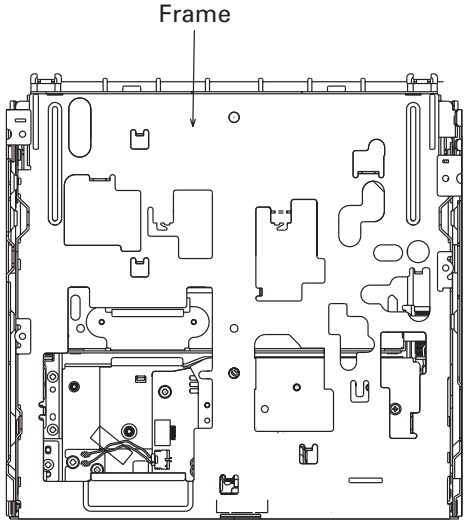


Fig.3

● **Removing the Holder (Fig.4)**

1 Remove the four screws and then remove the Holder.

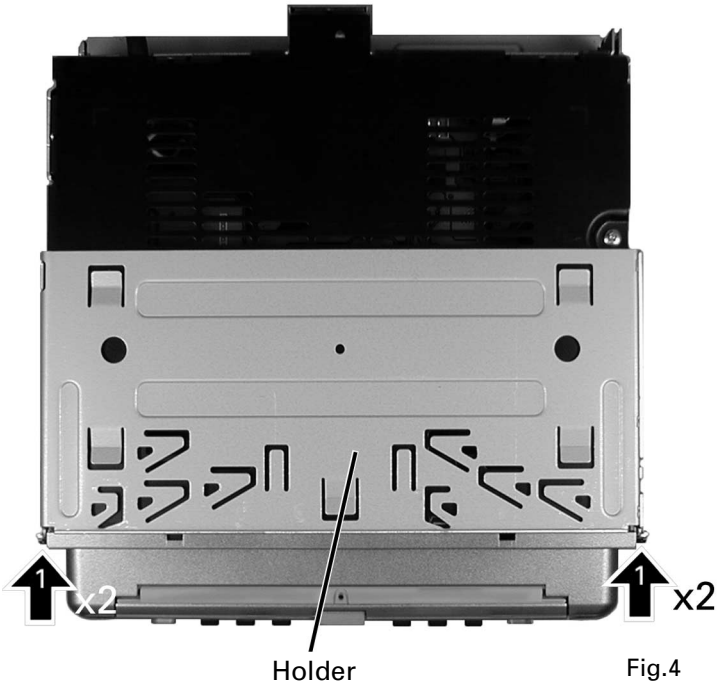


Fig.4

● **Removing the Case (Fig.5)**

1 Remove the six screws and then remove the Case.

● **Removing the Bracket (Fig.5)**

2 Remove the two screws and then remove the two Brackets.

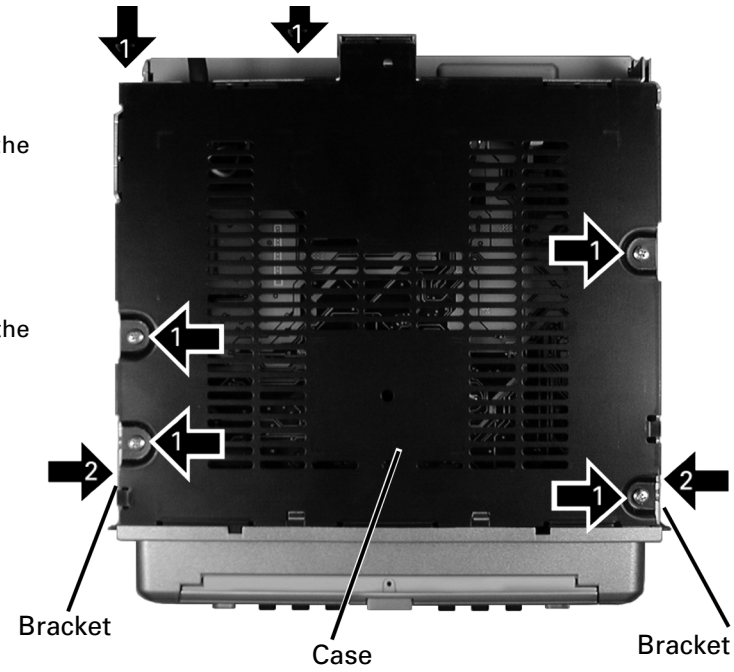


Fig.5

● **Removing the DVD Mechanism Module (Fig.6)**

1 Remove the screw and then remove the Extension PCB.

Disconnect the connector and then remove the DVD Mechanism Module.

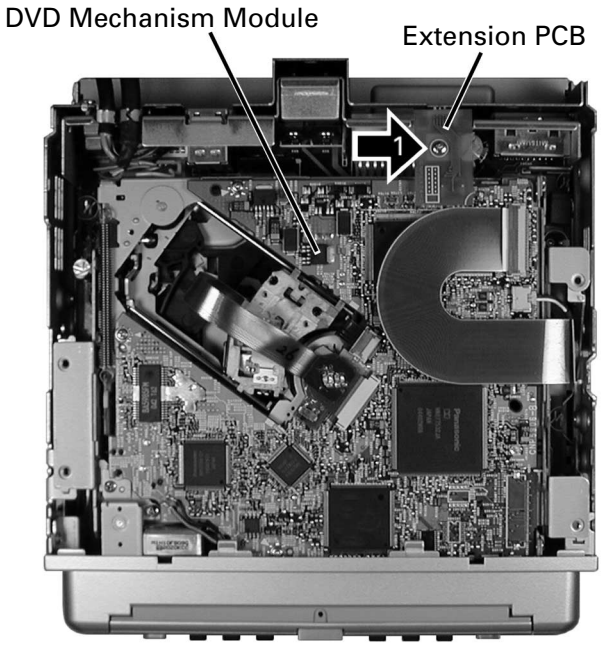


Fig.6

● **Removing the Grille Assy (Fig.7)**

1 Remove the two screws, remove the connector and then remove the Grille Assy.

● **Removing the Control PCB (Fig.7)**

2 Straight the tabs at six locations indicated.

3 Remove the screw.

The Control PCB is raised a little.
Connected connector on the other side is removed then remove the Control PCB.

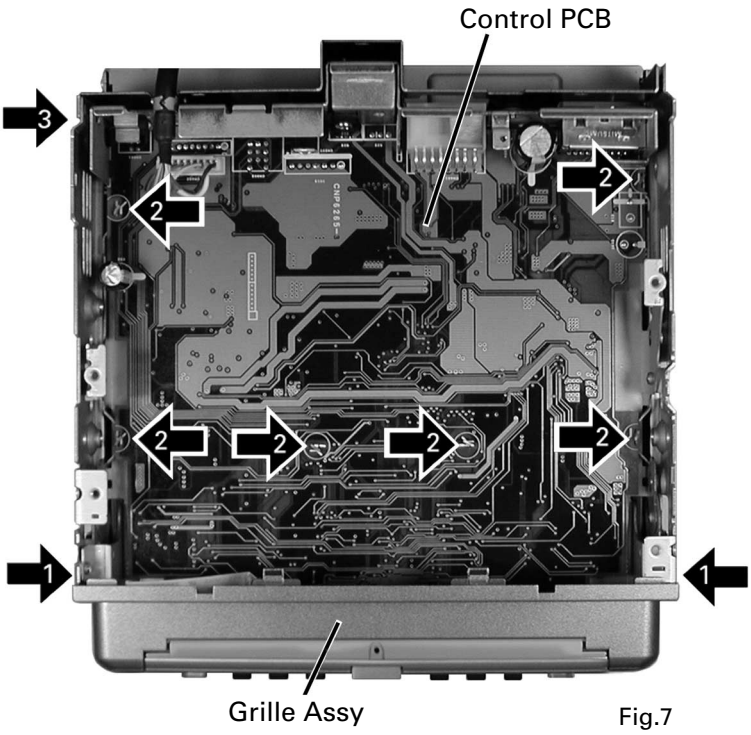


Fig.7

● **Removing the Frame (Fig.8)**

1 Remove the eight screws and then remove the Frame.

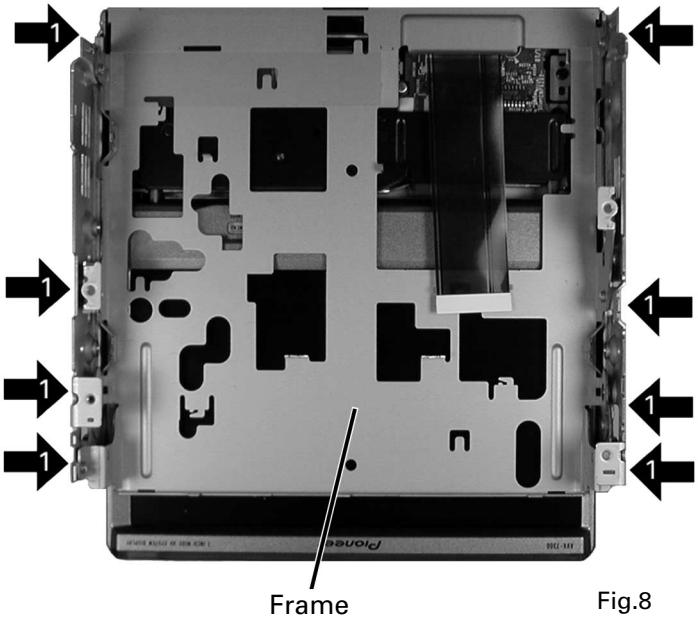


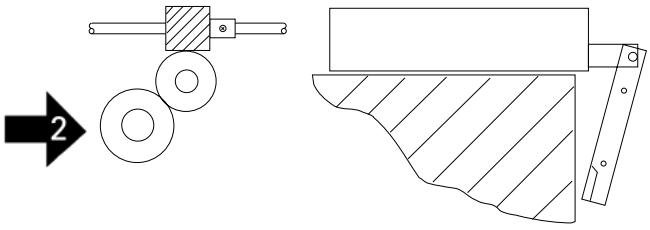
Fig.8

● **Pull out the Display Assy (Fig.9)**

1 Remove the four and two screws, remove the two covers.

2 Remove the gear.

3 Pull out the Display Assy.



Display assy becomes such a condition.

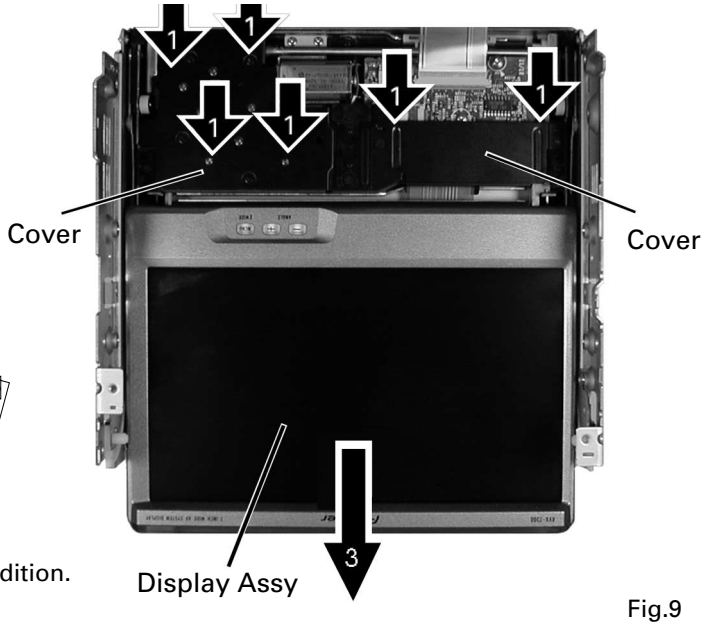


Fig.9

● **Removing the LCD Module (Fig.10)**

1 Remove the three screws and then remove the Cover.

2 Remove the four screws.

Disconnect the connector and then remove the LCD Module.

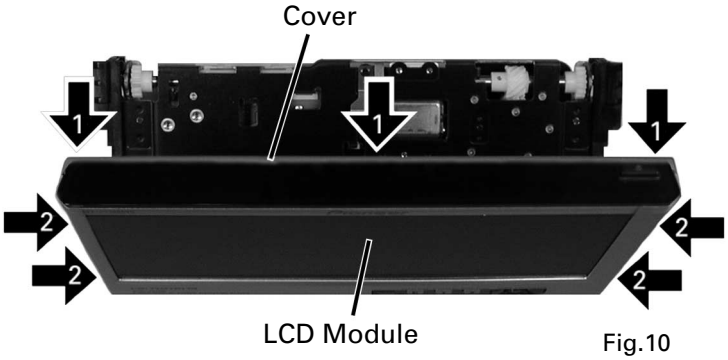


Fig.10

● Handling the mechanical module

1. The mechanical module should be handled by holding the upper frame and main frame of the mechanical module.
2. The front section of the upper frame is not very sturdy, so this section should not be held too firmly (see fig. 11).

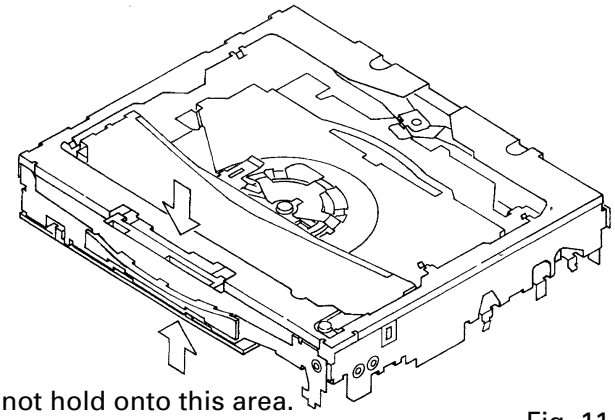


Fig. 11

● Removing the DVD CORE UNIT V

1. Bring the mechanism to a locked position (disk load standby position).
2. Turn the mechanical module upside down.
3. Set the pick-up flexible cable to a shorted position on the land end (the other is auxiliary), and turn the SW knob in the direction opposite to OP (see fig. 12).
4. Remove the pick-up flexible cable and the CRG flexible cable from the connector. Remove the solder on the lead wires of the load motor.
5. Remove a screw and two solders then remove the holder.
6. Remove screws at three locationsz, and remove the DVD Core Unit V (lift the board in the direction of the white arrow shown in fig. 13, and remove it out diagonally).

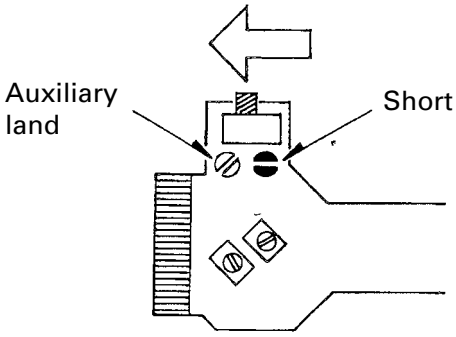


Fig. 12

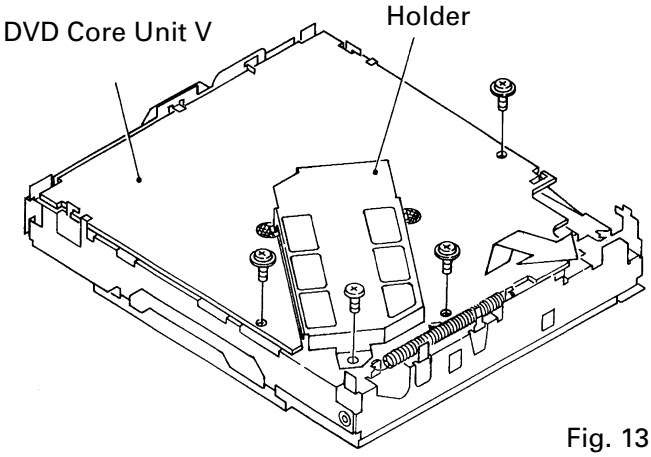


Fig. 13

● Removing the PU unit (see fig. 14)

1. Remove the DVD Core Unit V according to the "Removing the DVD Core Unit V" procedure described in the previous page.
2. Lift the pick-up rack to the center of the axis of the rack, turn it 90 degrees first, then press on it lightly, and fix it in place temporarily.
3. Remove the screw that keeps the main shaft clamp spring in place, and remove the main shaft clamp spring.
4. Remove the PU unit with the main shaft attached.

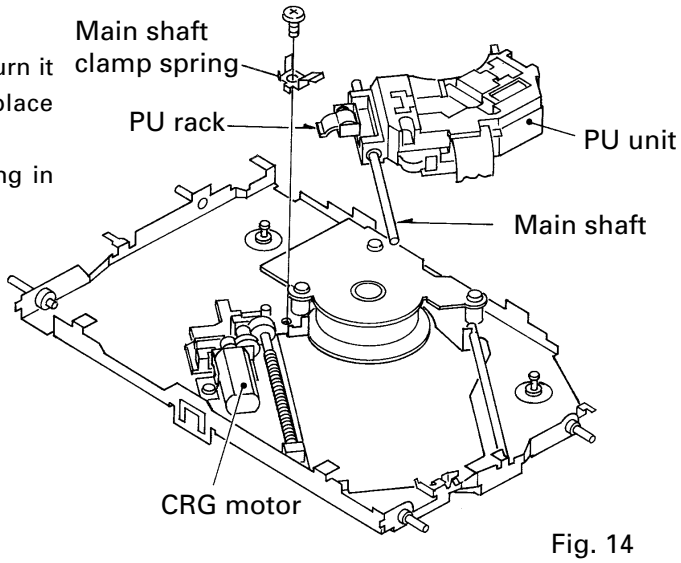
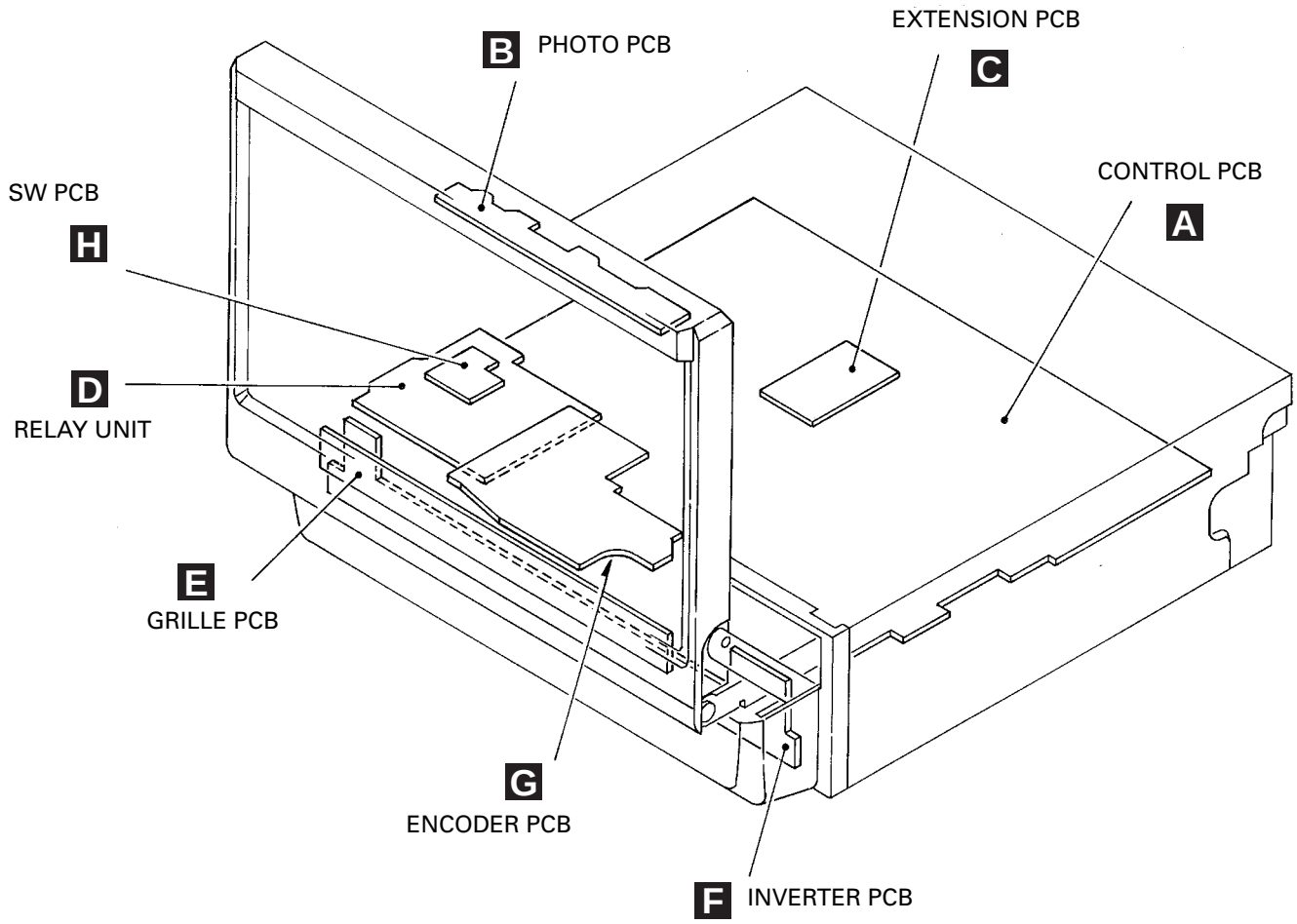
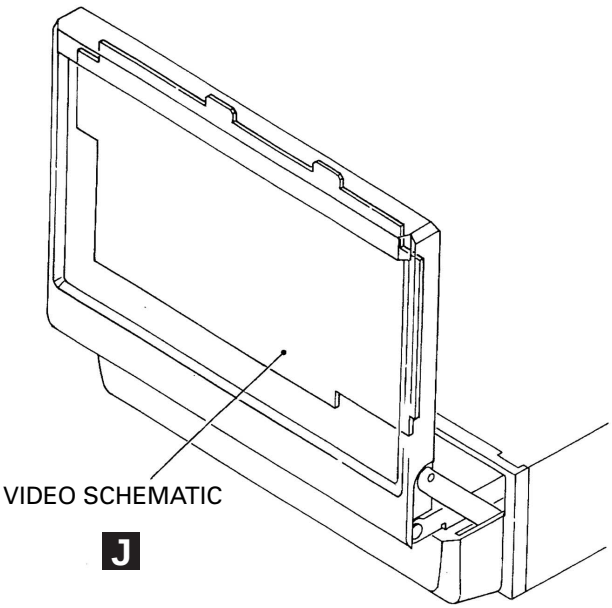
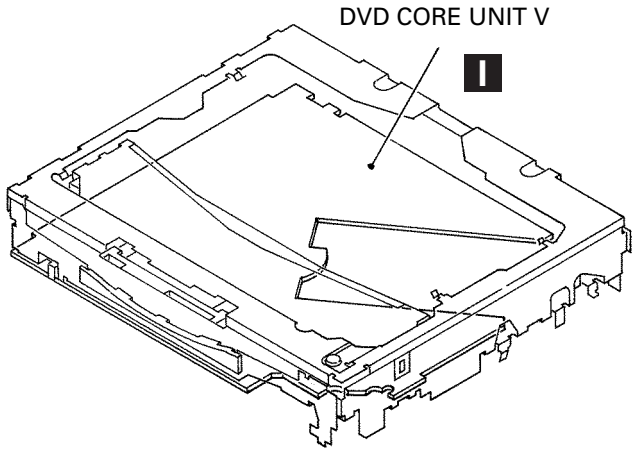


Fig. 14

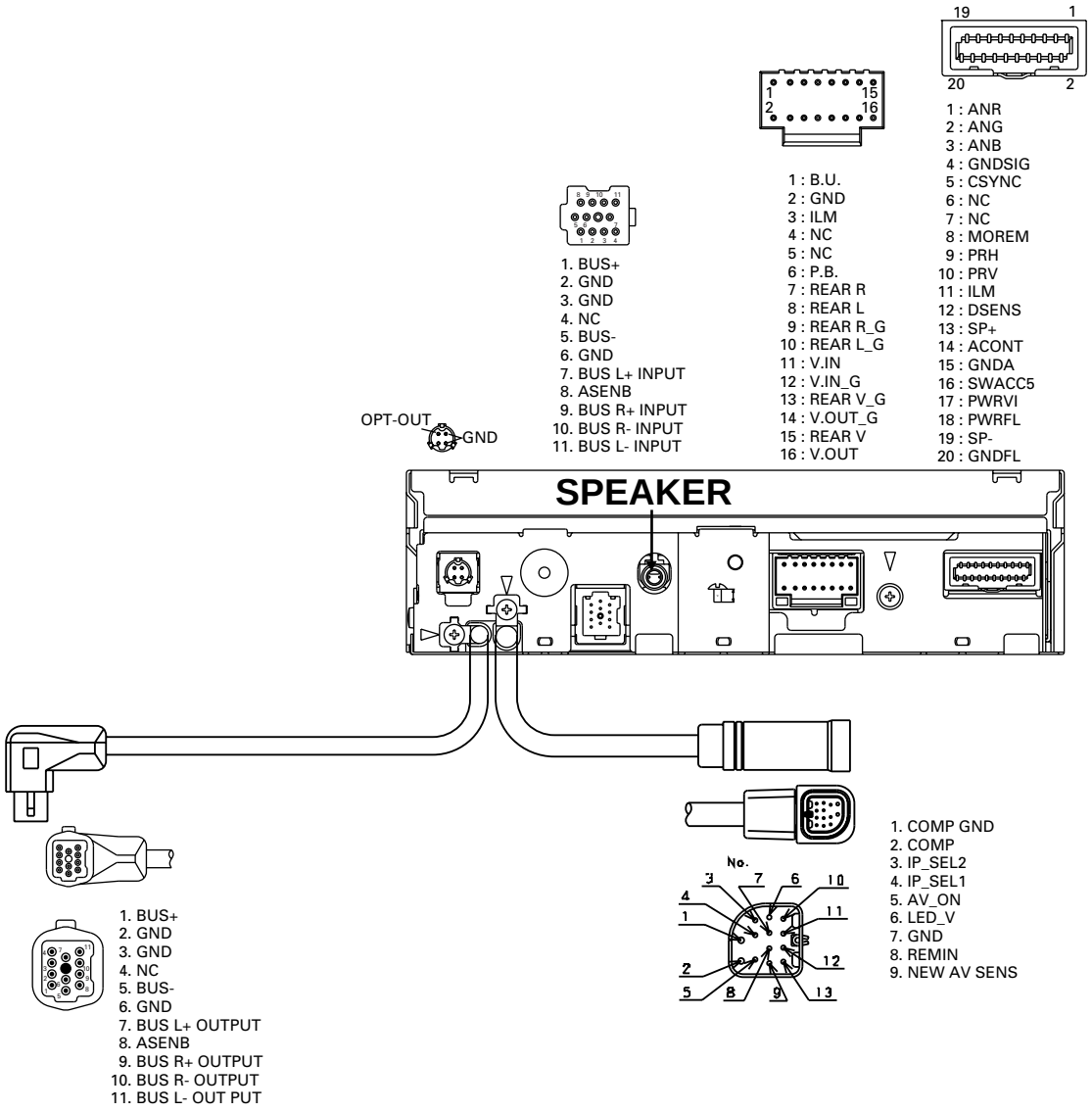
7.1.3 PCB LOCATIONS







7.1.4 CONNECTOR FUNCTION DESCRIPTION



7.2 IC

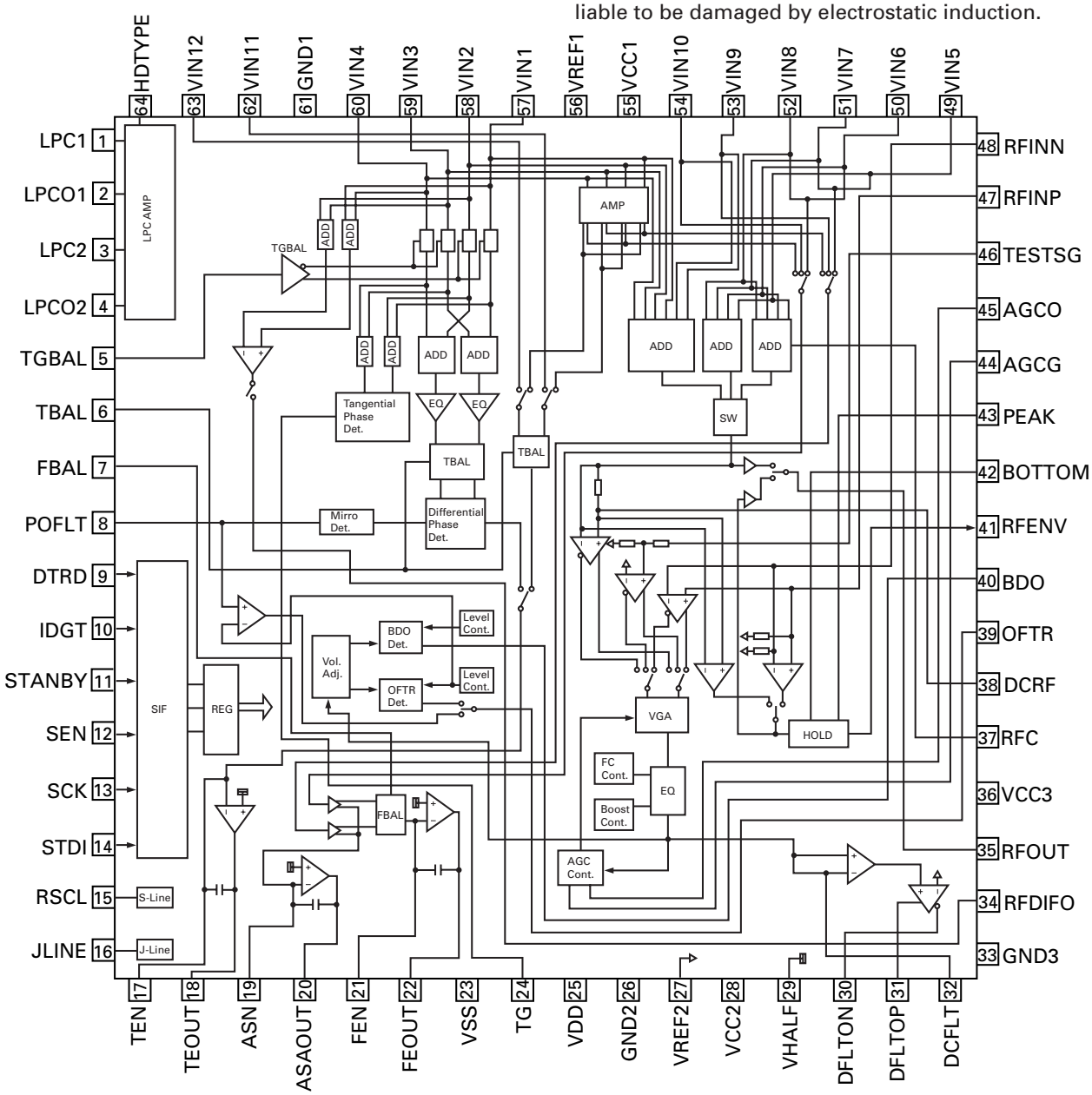
AN8702FH
MN677061ZYUB
MNZS25BDAUB
TC74LCX244FT
MSM56V16160F8TKFM
TC74VCX74FT
MN677532JAUB
TC74VCX04FT
SM8703AV
PD6354B
AK4380VT

TC74VCX08FT
PE5277A
BA033SFP
BA18BC0WFP
BA00BC0WFP
GP1S25
PD5582A
TC7S14FU
PE5230A
TC74VHCT08AFT
TA7806S

OZ960IS
BA6951FS
BA00ASFP
BP5250-1
PE5285A

IC's marked by * are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

*AN8702FH

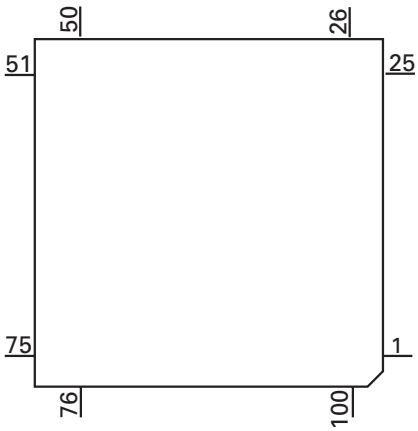


● **Pin Functions(MN677061ZYUB)**

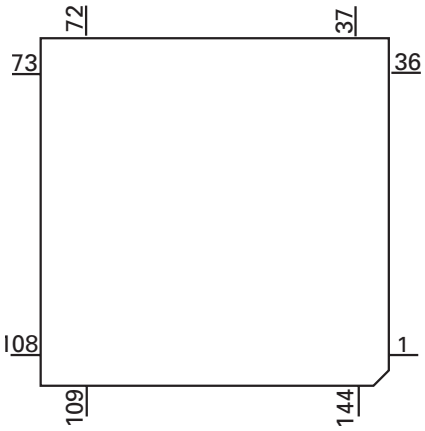
Pin No.	Pin Name	I/O	Function and Operation
1	AS	I	Full adder signal input
2	TE	I	Phase-contrast/Three beam tracking error input
3	FE	I	Focus error input
4	AVDD		Analog power supply (3.3V)
5	FODRV	O	Focus driver output
6	TRDRV	O	Tracking driver output
7	AVSS1		Analog GND
8	ARF	I	Equivalent RF+ input
9	$\overline{\text{ARF}}$	I	Equivalent RF- input
10,11	IREF1,2	I	DBAL reference current input 1,2
12,13	DSLF1,2	I/O	DSL capacitor input/output 1,2
14	AVDD2		Analog power supply (3.3V)
15	VHALF		Reference voltage (1.65±0.1V)
16,17	NC		Not used
18	VREFH		Reference voltage (2.2±0.1V)
19	RVI	I/O	VERFH reference current resistor input/output
20	AVSS2		Analog GND
21,22	PLFLT1,2	O	PLL capacitor output 1,2
23	JITOUT	I/O	Jitter signal monitor input/output
24	N.C.1	I	Open
25	N.C.2	I/O	Pull up
26	NC		Not used
27	AVDD3		Analog power supply (3.3V)
28	N.C.3	I	Pull up
29	N.C.4		Not used
30	AVSS3		Analog GND
31	N.C.5		Pull up
32	N.C.6		Not used
33	N.C.7		Open
34	TRCRS	I	Track cross production signal input
35	VCOF	I/O	JFVCO control voltage input/output
36	DBALO	O	DSL balance adjustment output
37	JLIN	O	J-line set output
38	AVDD4		Analog power supply (3.3V)
39	LOUT	O	Analog audio left output
40	ROUT	O	Analog audio right output
41	AVSS4	I	Analog GND
42	GBAL	O	Tangential balance adjustment output
43	TBAL	O	Tracking balance adjustment output
44	FBAL	O	Focus balance adjustment output
45	VSS331		I/O GND
46	VDD331		I/O power supply (3.3V)
47	OFTR	I	Off track signal input
48	SYSCLK	I	System clock input
49	BDO	I	RF dropout signal input
50	TSTSG	O	Calibration signal output
51	TRSDRV	O	Traverse driver output
52	SPDRV	O	Spindle driver output
53	FG	I	FG signal input
54	N.C.8		Not used
55	CRGDRV	O	Carriage driver output
56	N.C.10		Not used
57	VSS251		GND
58	VDD251		Power supply
59	DTRD	I	Data read control signal output
60	LDGT	I	GND
61	LRCK	O	LR channel data strobe output
62	SBBCLK	O	CD sub code synchronism signal output

Pin No.	Pin Name	I/O	Function and Operation
63	PLLOK	I	PLL drag OK signal input
64	IDHOLD		GND
65	DACLRCK	I	1bit DAC - LR channel data strobe input
66	DACDATA	I	CD 1bit DAC channel data input
67	$\overline{\text{TRON}}$	O	Tracking ON output
68	DACCLK	O	1bit DAC channel data shift clock input
69	IPFLG	O	CIRG error flag output
70	SUBC	O	CD sub code output
71	$\overline{\text{CLDCK}}$	O	CD sub code data frame clock output
72	MINTEST	I	GND
73	TEST	I	GND
74	VSS332		I/O GND
75	VDD332		I/O power supply (3.3V)
76	CHCK40	O	SRDATA clock output
77–80	DAT3–0	O	SRDATA output 3–0
81	VSS333		I/O GND
82	VDD333		I/O power supply (3.3V)
83	TX	O	Digital audio interface data output
84	XRESET	I	Reset input
85	ENS	I	Servo DSC serial I/F chip select input
86	ENC	I	CIRC serial I/F chip select input
87	CPUIRQ	O	Interrupt request output to system computer
88	CPUCLK	I	System computer serial I/F clock input
89	CPUDTIN	I	System computer serial I/F data input
90	CPUDTOUT	O	System computer serial I/F data output
91,92	MONA,B	O	Monitor terminal output A,B
93	CDPLLOK	O	CD PLL drag OK signal output
94	N.C.12		Not used
95	VSS252		GND
96	VDD252		Power supply
97,98	N.C.		Pull up
99	TG	I	Tangential phase-contrast input
100	REFNV	I	RF envelop input

*MN677061ZYUB



*MNZS25BDAUB

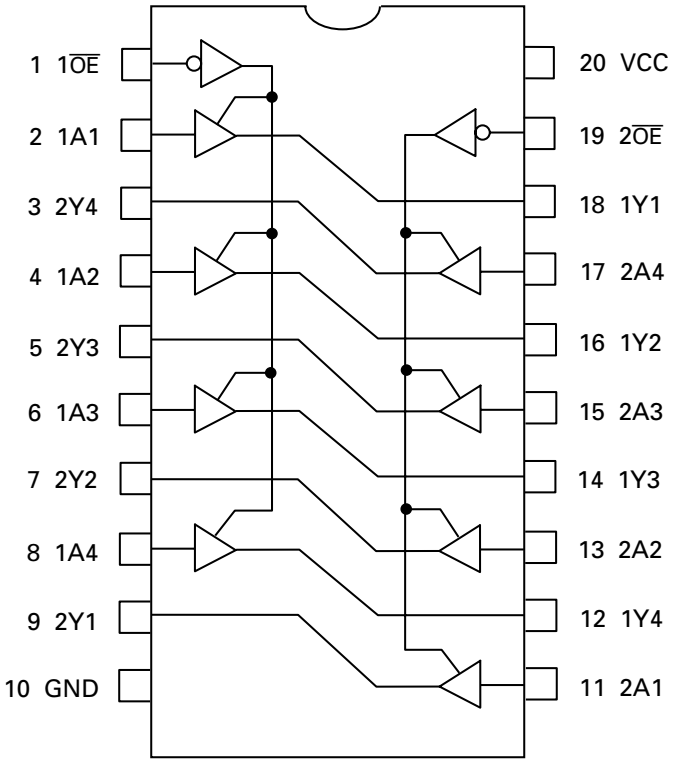


● **Pin Functions(MNZS25BDAUB)**

Pin No.	Pin Name	I/O	Function and Operation
1	HDD15	I/O	ATAPI HOST data input/output 15
2	HDD0	I/O	ATAPI HOST data input/output 0
3	HDD14	I/O	ATAPI HOST data input/output 14
4	VDD31		I/O power supply (3.3V)
5	HDD1	I/O	ATAPI HOST data input/output 1
6	HDD13	I/O	ATAPI HOST data input/output 13
7	HDD2	I/O	ATAPI HOST data input/output 2
8	VSS1		GND
9	HDD12	I/O	ATAPI HOST data input/output 12
10	VDD21		Digital power supply (2.7V)
11	HDD3	I/O	ATAPI HOST data input/output 3
12	HDD11	I/O	ATAPI HOST data input/output 11
13	HDD4	I/O	ATAPI HOST data input/output 4
14	HDD10	I/O	ATAPI HOST data input/output 10
15	VDD32		I/O power supply (3.3V)
16	HDD5	I/O	ATAPI HOST data input/output 5
17	HDD9	I/O	ATAPI HOST data input/output 9
18	VSS2		GND
19	HDD6	I/O	ATAPI HOST data input/output 6
20	HDD8	I/O	ATAPI HOST data input/output 8
21	HDD7	I/O	ATAPI HOST data input/output 7
22	VDDH		ATAPI reference power supply (5.0V)
23	$\overline{\text{RESET}}$		Reset input
24	MASTER	I/O	ATAPI master/slave select input/output
25	$\overline{\text{INT0}}$	O	System computer interrupt output 0
26	$\overline{\text{INT1}}$	O	System computer interrupt output 1
27	WAITODC	O	System computer bus wait control output
28	$\overline{\text{MRST}}$	O	System computer reset output
29	DASPST	I	DASP initialize value input
30	VDD33		I/O power supply (3.3V)
31	NC		Not used
32	P2	O	PORT output
33	UATASEL	I	Internal clock select input
34	VSS3		GND
35	PVSSDRAM1		GND
36	PVDDDRAM1		Digital power supply (2.7V)
37,38	CPUADR17,16	I	System computer address input 17,16
39	PVSSDRAM2		GND
40–43	CPUADR15-12	I	System computer address input 15-12
44	PVDDDRAM2		Digital power supply (2.7V)
45–55	CPUADR11-1	I	System computer address input11-1
56	VSS4		GND
57	CPUADR0	I	System computer address input 0
58	$\overline{\text{CS}}$	I	System computer chip select input
59	$\overline{\text{WR}}$	I	System computer write signal input
60	$\overline{\text{RD}}$	I	System computer read signal input
61	VDD34		I/O power supply (3.3V)
62,63	CPUDT7,6	I/O	System computer data input/output 7,6
64,65	PTESTDRAM0,1		GND
66	VDD22		Digital power supply (2.7V)
67	VSS5		GND
68–70	CPUDT5-3	I/O	System computer data input/output 5-3
71	VSS6		GND
72–74	CPUDT2-0	I/O	System computer data input/output 2-0
75	CLKOUT1	O	System computer clock output 1
76	VDD35		I/O power supply (3.3V)
77	NC		Not used
78	DTRD	O	CAPA read gate output
79	NC		Not used

Pin No.	Pin Name	I/O	Function and Operation
80	BDO	I	RF dropout signal input
81	LRCK	I	LR identifier signal input
82	SBBCLK	I	CD sub code block clock input
83	VSS7		GND
84	MMOD		GND
85	$\overline{\text{RST}}$	I	System reset input
86	VDD23		Digital power supply (2.7V)
87	CLKOUT2	O	System computer clock output 2
88	PLLOK	O	Frame mark detect signal output
89	NC		Not used
90	DACLRCK	O	LR identifier signal output
91	DACDATA	O	Serial output
92	$\overline{\text{TRON}}$	I	Tracking ON input
93,94	NC		Not used
95	DACCLK	I	1bit DAC Serial output clock input
96	IPFLG	I	interpolation flag input
97	TX	I	TX input
98	LRCK	I	VSS
99	VSS8		GND
100	OSCI1	I	Oscillator pin input
101	OSCO1	O	Oscillator pin output
102	VDD36		I/O power supply (3.3V)
103	PVSS		GND
104	PVDD		I/O power supply (3.3V)
105	P1		VDD3
106	P0		VDD3
107	VSS9		GND
108	NC		Not used
109	SUBC	I	Sub code serial input
110	XCLDCK	I	Sub code Frame clock input
111	CHCK4	I	Read clock input to DAT3-0
112–115	DAT3-0	I	Read data input from DISC 3-0
116	VDD37		I/O power supply (3.3V)
117	SCLOCK	I/O	Pull up
118	SDATA	I/O	Pull up
119–122	MONI3-0	O	Internal signal monitor output 3-0
123	VSS10		GND
124	$\overline{\text{EJECT}}$	I	Eject detect input
125	VDD24		Digital power supply (2.7V)
126	$\overline{\text{TRYCL}}$	I	Tray close detect input
127	$\overline{\text{DASP}}$	I/O	ATAPI drive active/slave connect input/output
128	$\overline{\text{CS3FX}}$	I	ATAPI HOST chip select input
129	$\overline{\text{CS1FX}}$	I	ATAPI HOST chip select input
130	VDD38		I/O power supply (3.3V)
131	DA2	I/O	ATAPI HOST address input/output 2
132	DA0	I/O	ATAPI HOST address input/output 0
133	$\overline{\text{PDIAG}}$	I/O	ATAPI slave/master diagnosis input/output
134	VSS11		GND
135	DA1	I/O	ATAPI HOST address input/output 1
136	$\overline{\text{IOCS16}}$	O	ATAPI HOST data bus width select output
137	INTRQ	O	ATAPI HOST interrupt request output
138	VDD39		I/O power supply (3.3V)
139	$\overline{\text{DMACK}}$	I	ATAPI HOST DMA response input
140	IORDY	O	ATAPI HOST ready output
141	$\overline{\text{IORD}}$	I/O	ATAPI HOST data read input/output
142	VSS12		GND
143	$\overline{\text{IOWR}}$	I/O	ATAPI HOST data write input/output
144	DMARQ	O	ATAPI HOST DMA request output

*TC74LCX244FT



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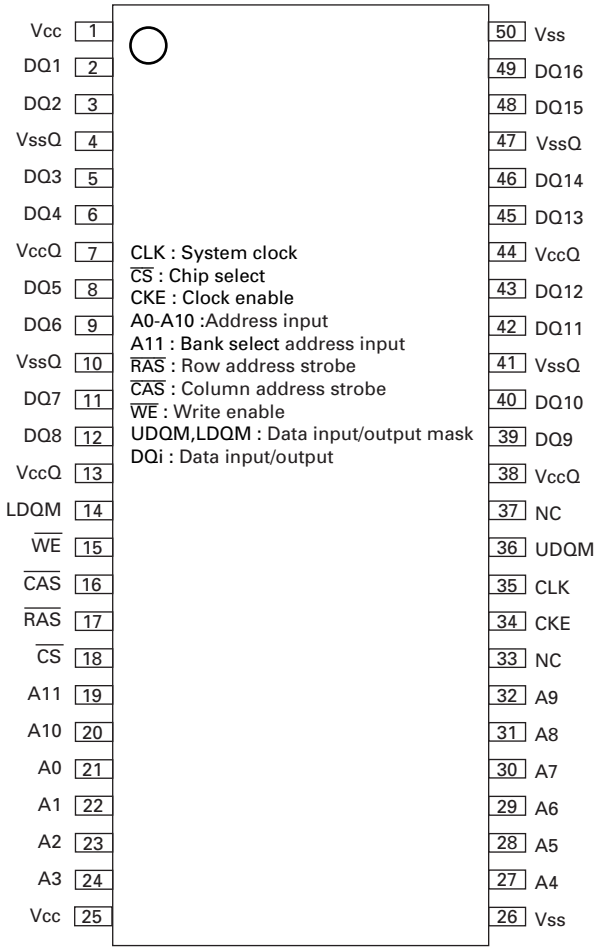

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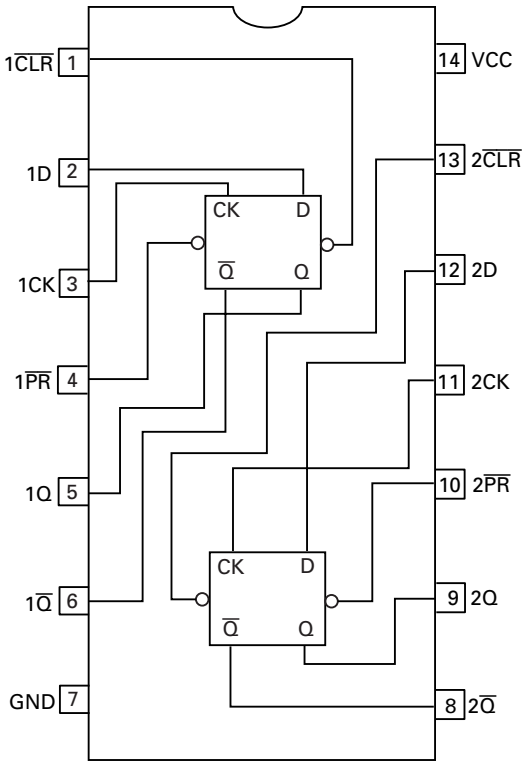

● **Pin Functions(MN677532JAUB)**

Pin No.	Pin Name	I/O	Function and Operation
1	VDD-1		Power supply
2	MA0	O	Bank sell and address
3	MA6	O	Bank sell and address
4	MA1	O	Bank sell and address
5	VSS-5		GND
6	MA5	O	Bank sell and address
7	MA2	O	Bank sell and address
8	MA4	O	Bank sell and address
9	VDD-9		Power supply
10	MA3	O	Bank sell and address
11	TEST9	O	Test signal
12	XRST	I	System reset
13	TEST8	O	Test signal
14	LVDD-14	O	Lch Power supply
15-18	TEST7-4	O	Test signal
19	VSS-19		GND
20	TEST3	O	Test signal
21	RFF-21	O	Repeat first field flag output
22	TEST1	O	Test signal
23	RFF-23	O	Repeat first field flag output
24	VSS-24	O	GND
25,26	HMD1,0	I	Host CPU select
27	XHINT	O	Interrupt strobe
28	XDK	O	Data acknowledge
29	VSS-29		GND
30	XWR	I	Write enable
31	XRD	I	Read enable
32	XCS	I	Chip select
33	HCLK	I	Host CPU clock
34	VDD-34		Power supply
35-38	HA1-4	I	Address bus
39	LVDD-39		Lch Power supply
40-43	HA5-8	I	Address bus
44	VSS-44		GND
45-47	HA9-11	I	Address bus
48	VDD-48	I	Power supply
49-51	HD0-2	I/O	Data bus
52	VSS-52		GND
53	VDD-53	I	Power supply
54-57	HD3-6	I/O	Data bus
58	VSS-58		GND
59-62	HD7-10	I/O	Data bus
63	LVDD-63		Lch Power supply
64-67	HD11-14	I/O	Data bus
68	VSS-68		GND
69	HD15	I/O	Data bus
70	AUDSTR	I	Data strobe
71	VSTR	I	Data strobe
72	VRQ	O	DMA request
73	AVRTM	I	Select separation signal
74	VDD-74		Power supply
75-78	STD7-4	I	Stream data/CD-Audio bypass port
79	LVDD-79		Lch Power supply
80-83	STD3-0	I	Stream data/CD-Audio bypass port
84	VSS-84		GND
85	IECOUT	O	IEC958 data output
86	TEST10	O	Test signal
87	LVDD-87		Lch Power supply

Pin No.	Pin Name	I/O	Function and Operation
88	DACCK	O	DAC clock output
89	LRCK	O	LR clock output
90	SRCK	O	Bit clock output
91	VDD-91		Power supply
92-94	ADOUT0-2	O	Audio data output
95	VSS-95		GND
96	CLKMON	O	Clock monitor
97	CLK121	I	121.5MHz clock input
98	VDD-98	O	Power supply
99	CLK27	I	27MHz clock input
100	PLLAVDD		PLL analog power supply
101	TCPOUT	O	OPEN
102	PLLAVSS	O	OPEN
103	CKIO	I	81MHz clock select
104	PLLVDD		PLL
105	LVDD-105		Lch power supply
106	CLK81	I	81MHz clock input
107	VSS-107	I	GND
108	APLLVDD		Analog PLL power supply
109	ATCPOUT	O	OPEN
110	EXTCK	I	Outside clock output
111	VDD-111		Power supply
112	APLLAVDD		Analog PLL audio power supply
113	AVROUT		OPEN
114	AVCOIN		GND
115	APLLAVSS		Analog PLL audio GND
116	VREFB	I	DAC reference input
117	IREFB	I	DAC resistance terminal for bias current setting
118	COMPB	I	DAC capacity connection terminal for stabilization
119	VBOUT	O	C analog output
120	AVDD1		Analog power supply
121	VREFG	I	DAC reference input
122	IREFG	I	DAC resistance terminal for bias current setting
123	COMPG	I	DAC capacity connection terminal for stabilization
124	VGOUT	O	Cb composite analog output
125	AVSS1		Analog GND
126	VREFC	I	DAC reference input
127	IREFC	I	DAC resistance terminal for bias current setting
128	COMPC	I	DAC capacity connection terminal for stabilization
129	VCOUT	O	Cr C analog output
130	AVDD0		Analog power supply
131	VREFY	I	DAC reference input
132	IREFY	I	DAC resistance terminal for bias current setting
133	COMPY	I	DAC capacity connection terminal for stabilization
134	VYOUT	O	Y analog output
135	AVSS0		Analog GND
136	N.C.		Not used
137	ACKIO	I	Audio PLL test mode
138	MODE121	I	Clock mode select
139	PLLTEST		PLL test
140,141	TESTSEL0,1	O	Test signal
142	DCTEST	I	DC test mode
143	XVSYNCO	I/O	Vertical sync input/output
144	XHSYNCO	I/O	Horizontal sync input/output
145	VCLK	O	Video data clock
146	LVDD-146		Lch power supply
147-150	VD0-3	O	Video data bus
151	VSS-151		GND
152-155	VD4-7	O	Video data bus

Pin No.	Pin Name	I/O	Function and Operation
156	VDD-156		Power supply
157	VSS-157		GND
158	MDQ15	I/O	I/O data SDRAM
159	MDQ0	I/O	I/O data SDRAM
160	VDD-160		Power supply
161	MDQ14	I/O	I/O data SDRAM
162	MDQ1	I/O	I/O data SDRAM
163	VSS-163		GND
164	MDQ13	I/O	I/O data SDRAM
165	MDQ2	I/O	I/O data SDRAM
166	VDD-166		Power supply
167	MDQ12	I/O	I/O data SDRAM
168	MDQ3	I/O	I/O data SDRAM
169	VSS-169		GND
170	MDQ11	I/O	I/O data SDRAM
171	MDQ4	I/O	I/O data SDRAM
172	VDD-172		Power supply
173	MDQ10	I/O	I/O data SDRAM
174	LVDD-174		Lch power supply
175	MDQ5	I/O	I/O data SDRAM
176	VSS-176		GND
177	MDQ9	I/O	I/O data SDRAM
178	MDQ6	I/O	I/O data SDRAM
179	VDD-179		Power supply
180	MDQ8	I/O	I/O data SDRAM
181	MDQ7	I/O	I/O data SDRAM
182	VSS-182		GND
183	MCKI	I	SDRAM CLK input
184	VDD-184		Power supply
185	MCK	I	SDRAM CLK
186	VSS-186		GND
187	DQMLE	O	Lower byte DQ mask of extended SDRAM
188	LVDD-188		Lch power supply
189	DQMLM	O	Lower byte DQ mask of main SDRAM
190	DQMUE	O	Upper byte DQ mask of extended SDRAM
191	VDD-191		Power supply
192	DQMUM	O	Upper byte DQ mask of main SDRAM
193	XWE	O	Write signal of SDRAM
194	VSS-194		GND
195	XCAS	O	CAS of SDRAM
196	XRAS	O	RAS of SDRAM
197	VDD-197		Power supply
198	XCSE	O	CS of extended SDRAM
199	XCSM	O	CS of main SDRAM
200	VSS-200		GND
201	MA9	O	Bank sell and address
202	LVDD-202		Lch power supply
203	MA11	O	Bank sell and address
204	MA8	O	Bank sell and address
205	VDD-205		Power supply
206	MA10	O	Bank sell and address
207	MA7	O	Bank sell and address
208	VSS-208		GND

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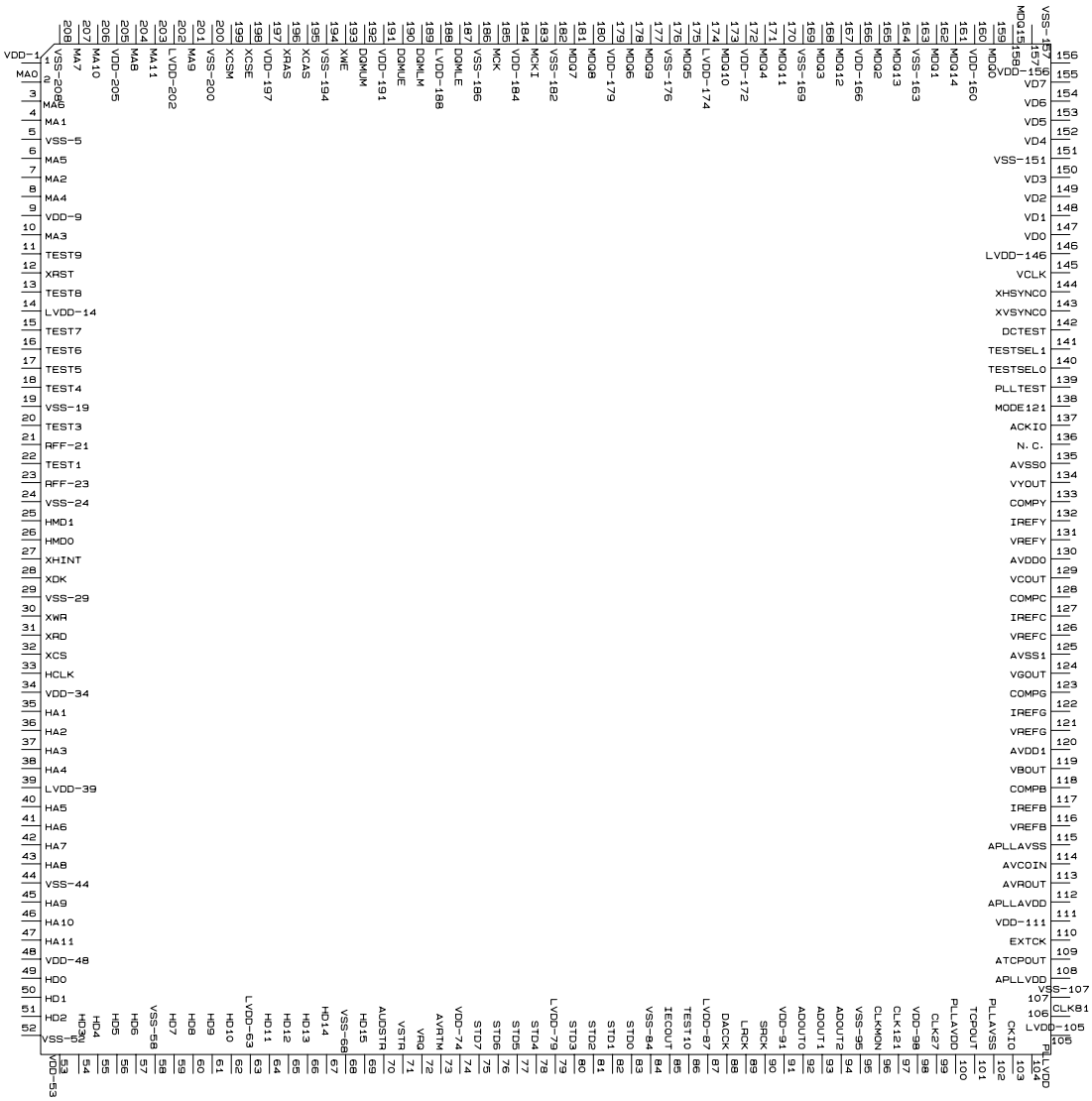

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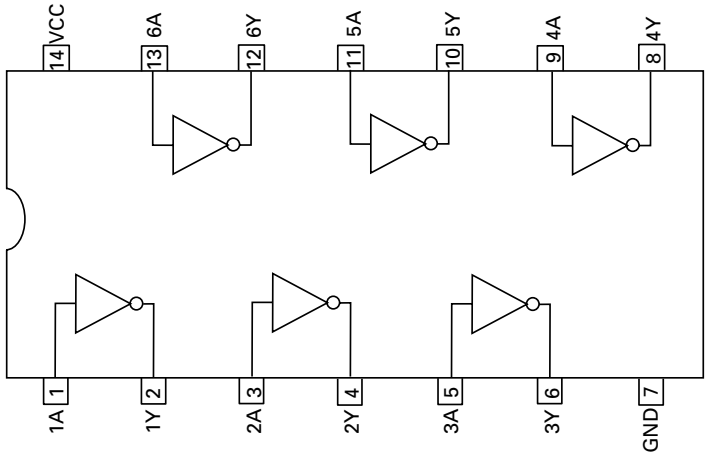

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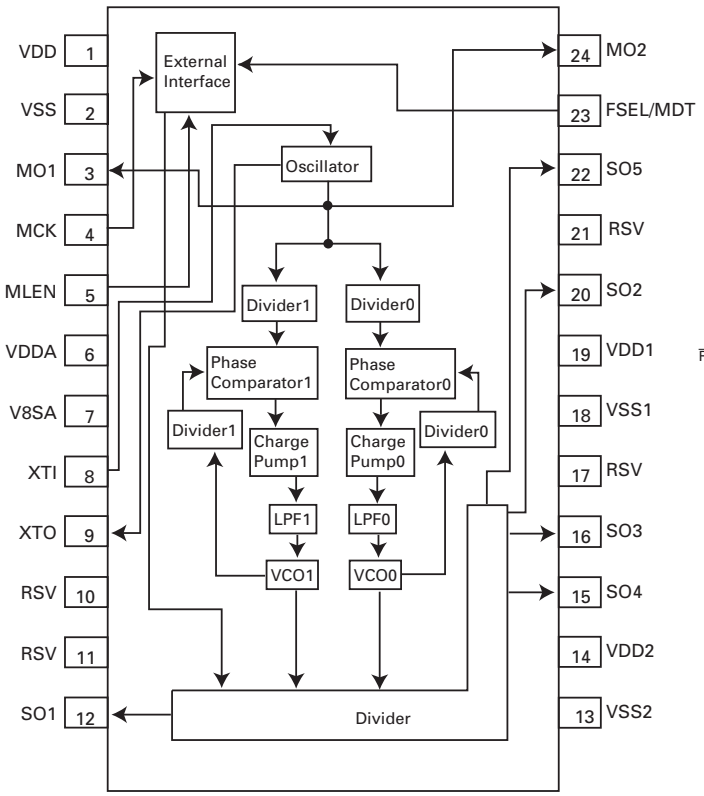
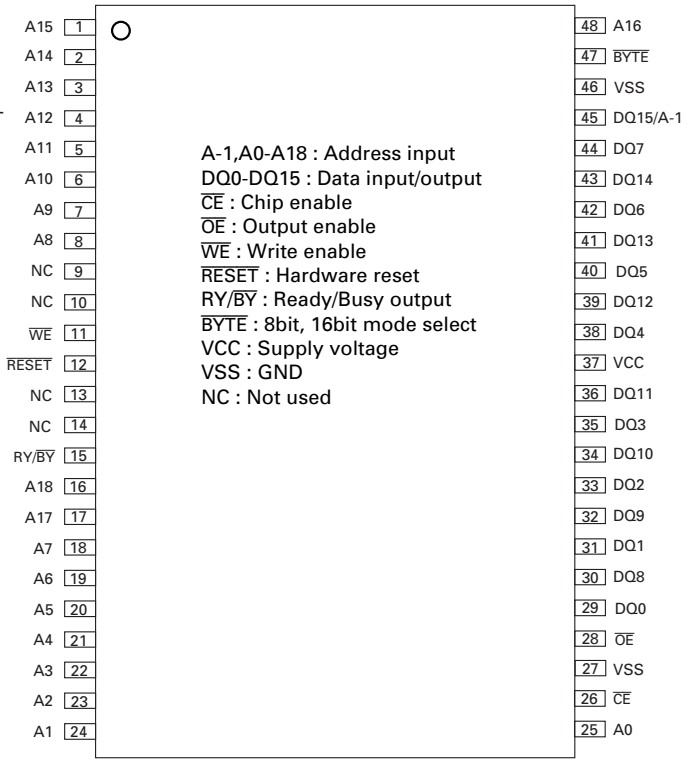


*PD6354B



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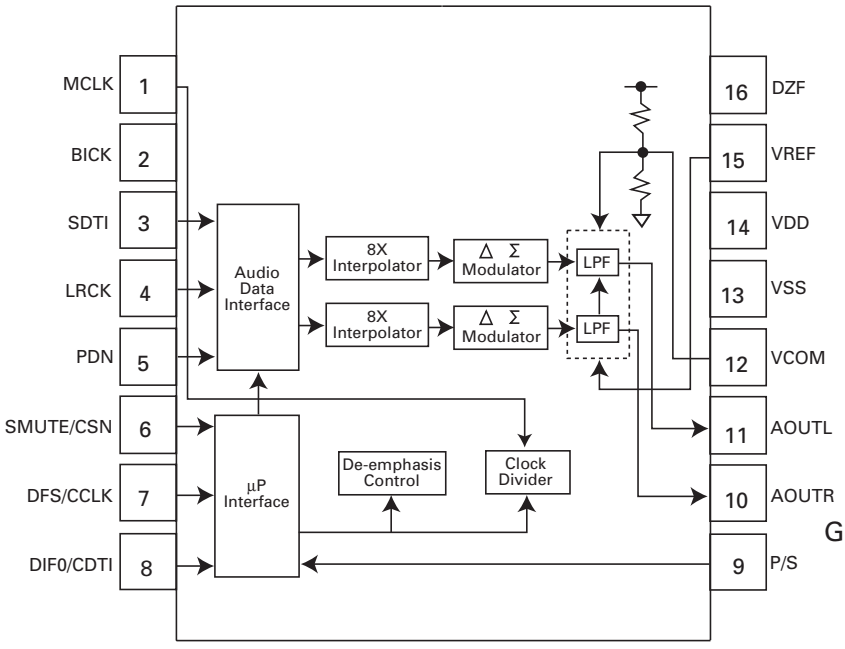

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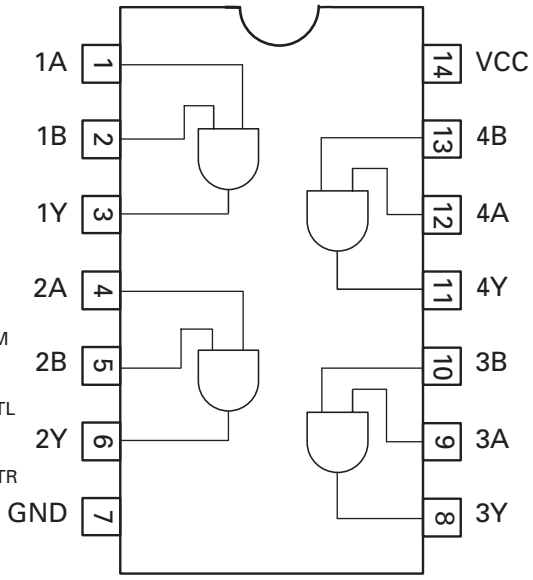

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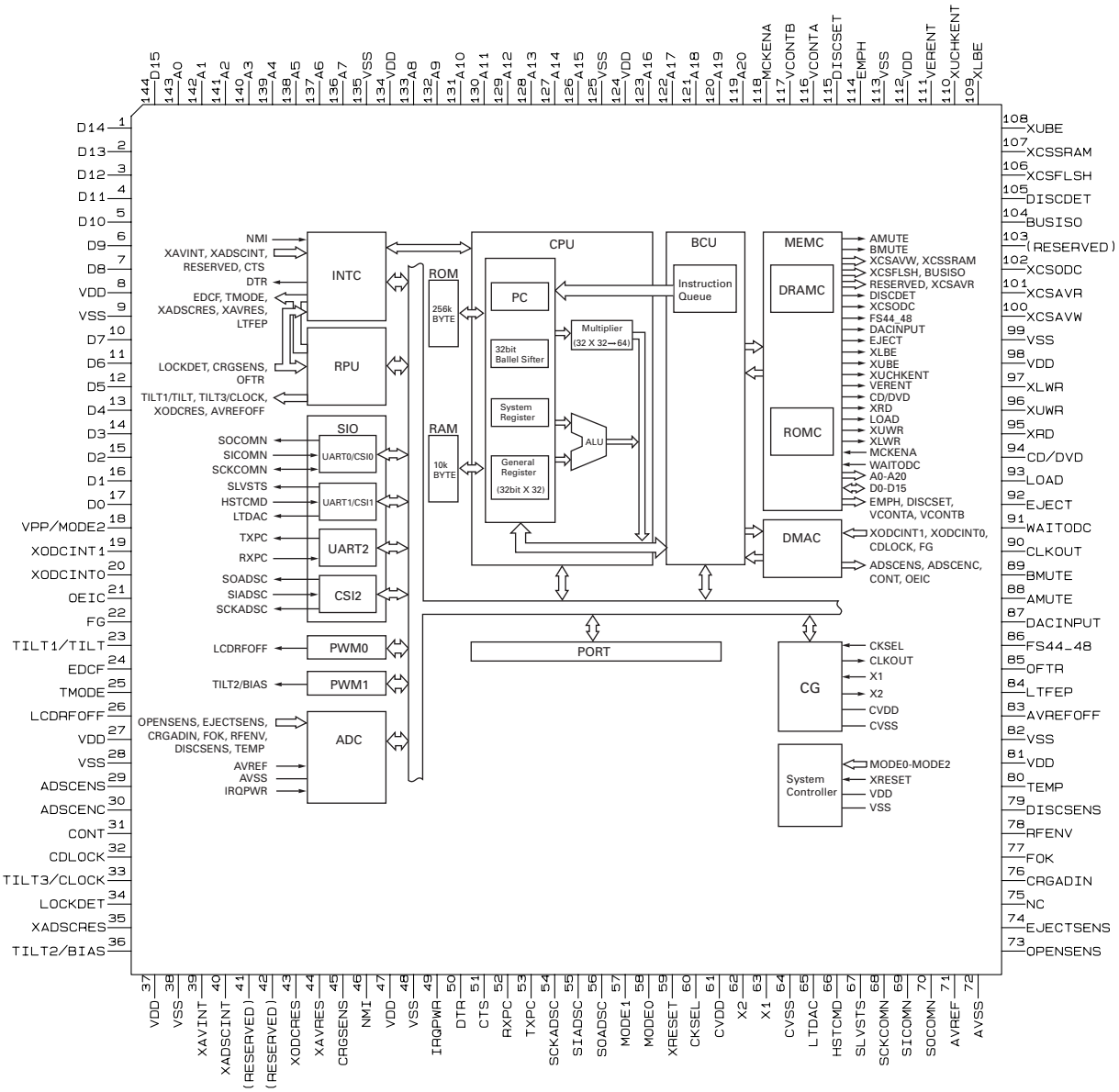

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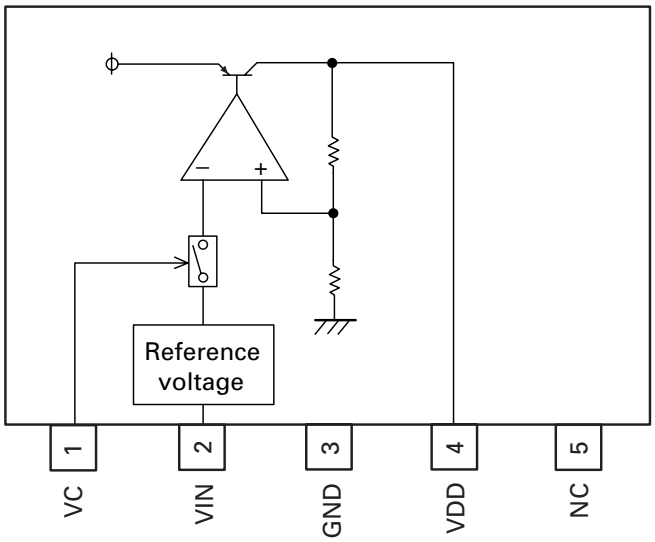

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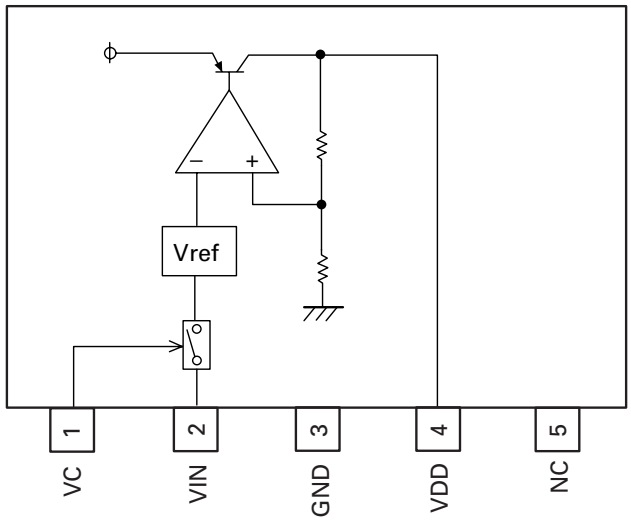

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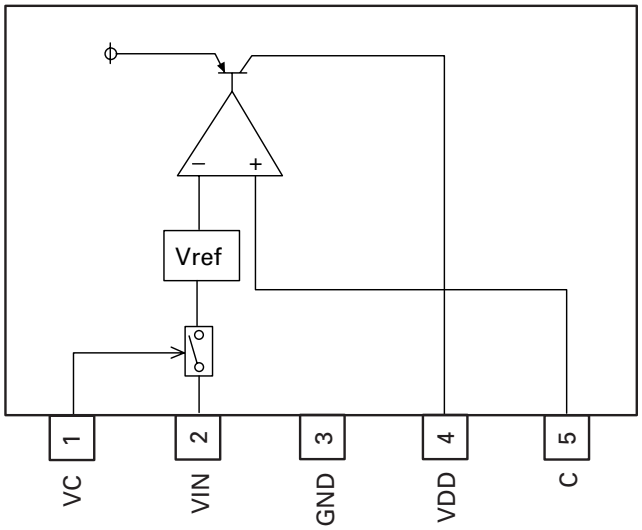

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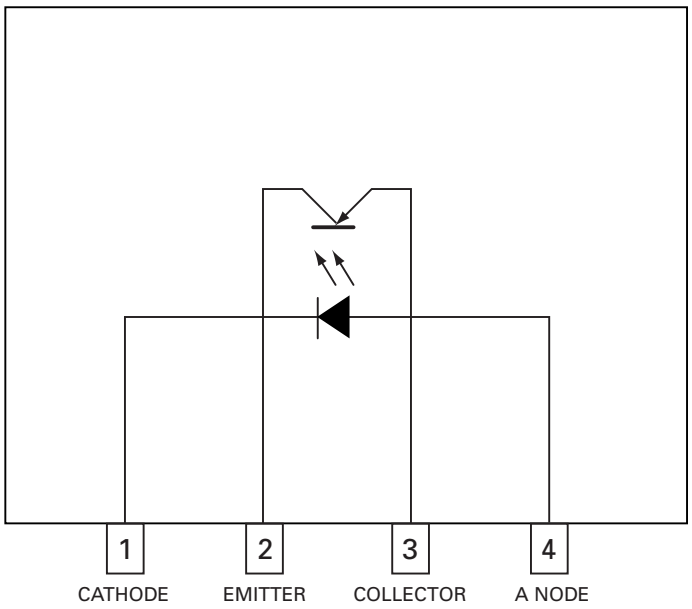
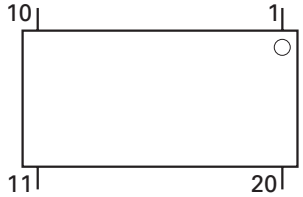


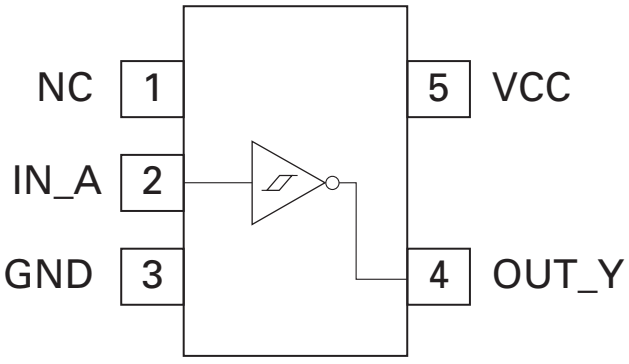
● **Pin Functions(PD5582A)**

Pin No.	Pin Name	I/O	Function and Operation
1	OSC1	I	External terminal of oscillator circuit for display
2	OSC2	O	External terminal of oscillator circuit for display
3	$\overline{CS}$	I	Chip select input
4	SCK	I	Serial clock input
5	SI	I	Serial data input
6	$\overline{AC}$	I	Auto clear input
7-10	P6-P9	O	Port output
11	VSS		GND
12	P0	O	Port output
13	P1/R	O	Port output or R output
14	P2	O	Port output
15	P3/G	O	Port output or G output
16	P4	O	Port output
17	P5/B	O	Port output or B output
18	HOR	I	Horizontal synchronous signal input
19	VERT	I	Vertical synchronous signal input
20	VDD		Positive power supply terminal

*PD5582A



*TC7S14FU



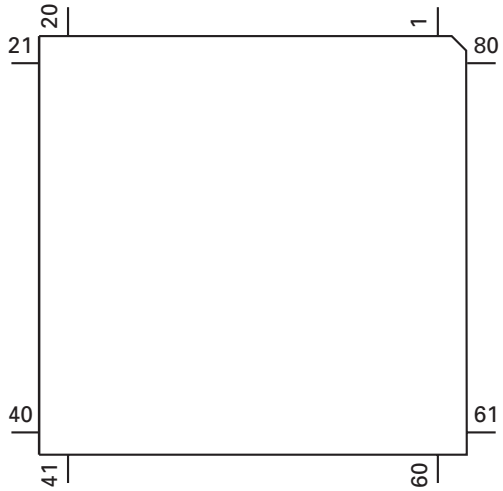
● **Pin Functions (PE5230A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	MODEL2	I		Model select analog input
2,3	NC			Not used
4	AVSS			GND
5	DIMMER	O	C	Dimmer control output
6	ADPOW	O	C	ADPOWER control output
7	AVREF1			D/A converter reference voltage (Connects to VDD)
8	ROMDATA	O	C	Data output
9	ROMCLK	O	C	Clock output
10	ROMCS	O	C	Chip select output
11	DOTCON	O	C	OSD dot control output
12	OSDDT	O	C	OSD data output
13	OSDCK	O	C	OSD clock output
14	OSDCS	O	C	OSD chip select
15	OSDBOUT	O	C	OSD paint screen output
16	TDI/FLDI	I	C	Chip test/Data input for flash
17	TDO/FLDO	O	C	Chip test/Data output for flash
18	TCK/FLCK	O	C	Chip test/Clock for flash
19-21	NC			Not used
22	MTR1	O	C	Storage motor changeover/brake-mode designating output 1
23	MTR2	O	C	Storage motor changeover/brake-mode designating output 2
24	MTRPW	O	C	Flap motor driver power switch output
25,26	NC			Not used
27	DACDI	O	C	DAC data output
28	DACCLK	O	C	DAC clock output
29	DACLD	O	C	DAC code output
30	PLSENSE0	I	C	Pulse sense 0
31	PLSENSE1	I	C	Pulse sense 1
32	DEG0SW	I	C	Detection sense SW input of 0 in angle
33	VSS			GND
34	$\overline{\text{PWSENS}}$	I	C	Navigation/R513 power “ON” input
35	$\overline{\text{PWSAVE}}$	O	C	Power save output
36	IPAUTO	I	N	DVDSIP synchronization information
37	$\overline{\text{ISENS}}$	I	N	Illumination sensor input
38	$\overline{\text{DLED}}$	O	N	Burglar alarm LED driving output
39	$\overline{\text{SWVDD}}$	O	N	Remote controller power and external light sensing power outputs
40	BLTPW	O	C	LCD backlight output
41	VPOWER	O	C	Video circuit power output
42	NC			Not used
43	MONFLAME	O	C	Monitor frame control output ($\overline{\text{NTSC}}$/PAL)
44	RGBCOM	O	C	RGB/COMPOSIT select output
45	PEEOUT	O	C	PEE output
46	MODE2	O	C	Display mode changeover output 2
47	MODE3	O	C	Display mode changeover output 3
48	VSEL1	O	C	Change output in COMPOSIT
49	VSEL2	O	C	DVDS compulsion selection change output in COMPOSIT
50	MODE1	O	C	Display mode changeover output 1
51	DUALILM	O	C	Dual illumination color setting output ($\overline{\text{GREEN}}$/AMBER)
52	SEIHIN	I	C	Model select input
53	ILMPW	O	C	ILMPW output
54	PBSENS	I	C	Parking sense input
55	SYSPW	O	C	SYSPW output
56	SELTIME	I	C	AVRGB switching time input
57	VSELIN1	I		VSEL input 1
58	VSELIN2	I	C	VSEL input 2
59	AVON	I	C	New AV display input
60	$\overline{\text{RESET}}$	I		Reset
61	VSYNCIN	I		Frame frequency 50/60Hz (VSINC) input

Pin No.	Pin Name	I/O	Format	Function and Operation
62	NC			Not used
63	$\overline{\text{DSENS}}$	I	C	Detach input
64	REMIN	I	C	Remote controlling signal input
65	$\overline{\text{ASENS}}$	I	C	ACC sensor input
66	$\overline{\text{BSENS}}$	I	C	Backup input
67	NC			Not used
68	VDD			VDD
69	X2	O		Oscillator output
70	X1	I		Oscillator input
71	IC			Connection to grounding circuit
72	XT2			Sub-clock terminal
73	TESTIN	I		Test mode
74	AVDD	I		Analog power for A/D converter
75	AVREF0	I		Reference voltage input for A/D converter
76	LSENS	I	C	External light sensor input
77	KEYIN1	I	C	Key input 1
78	KEYIN2	I	C	Key input 2
79	KEYIN3	I	C	Key input 3
80	KEYIN4	I	C	Key input 4

Format	Meaning
C	C MOS
N	N channel open drain

*PE5230A



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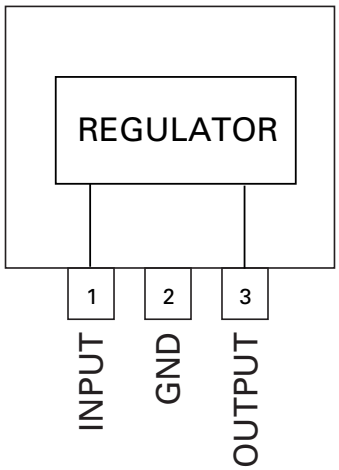

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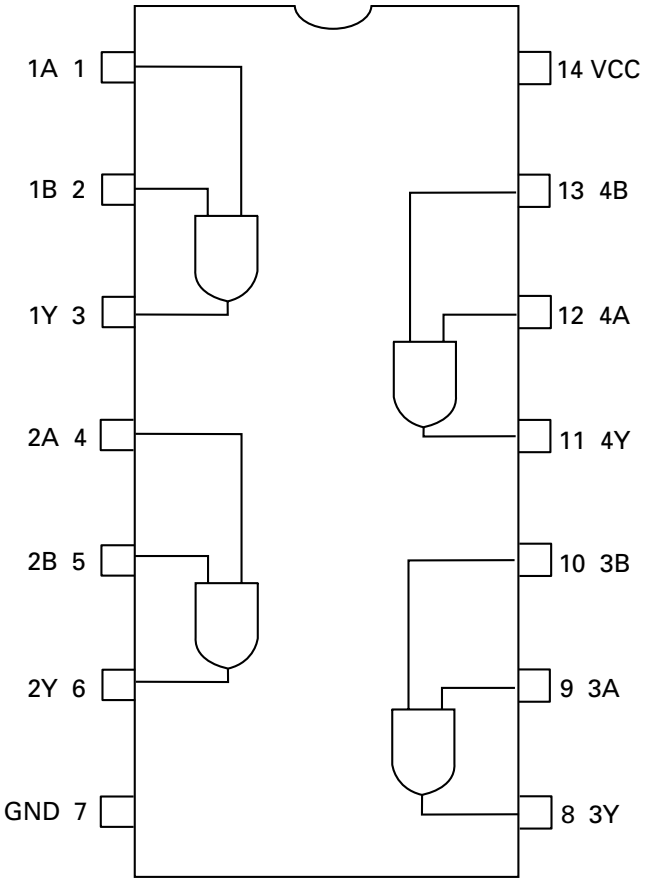

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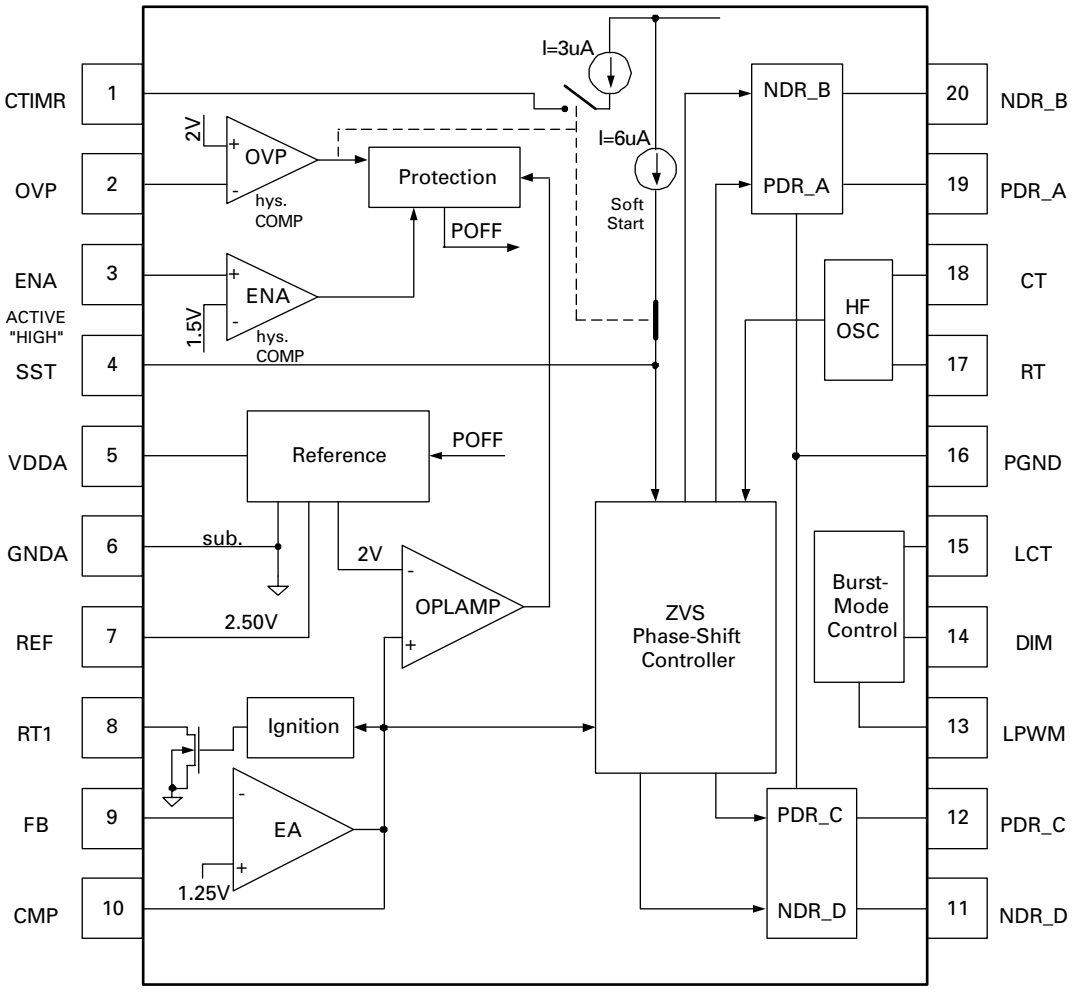

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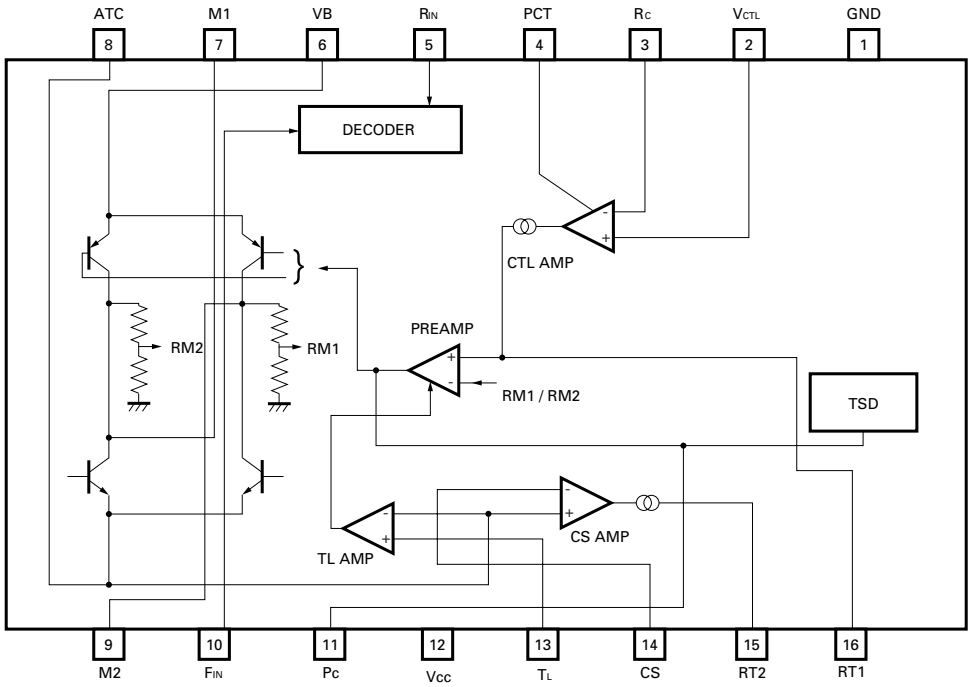

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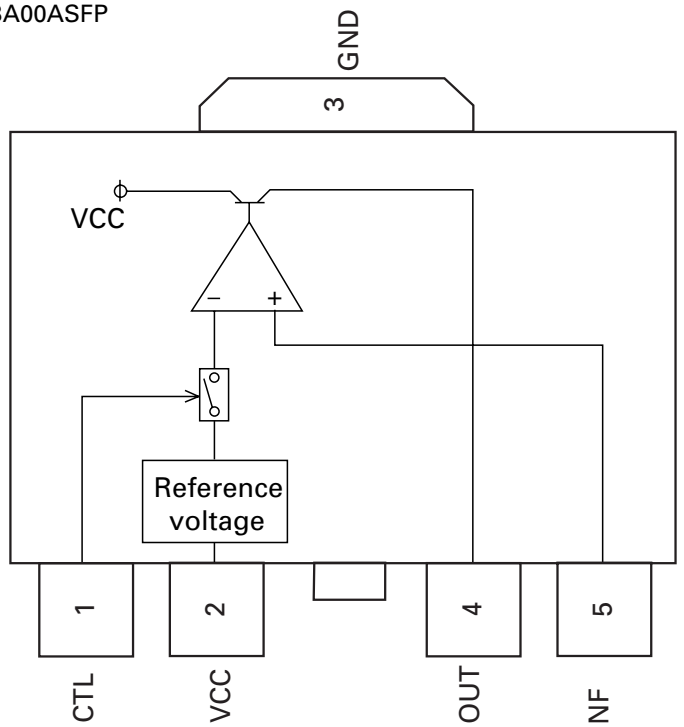

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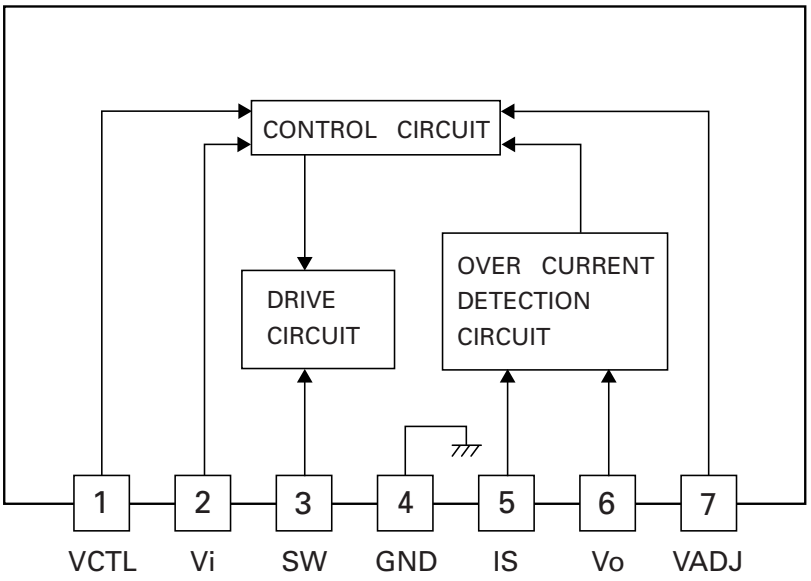
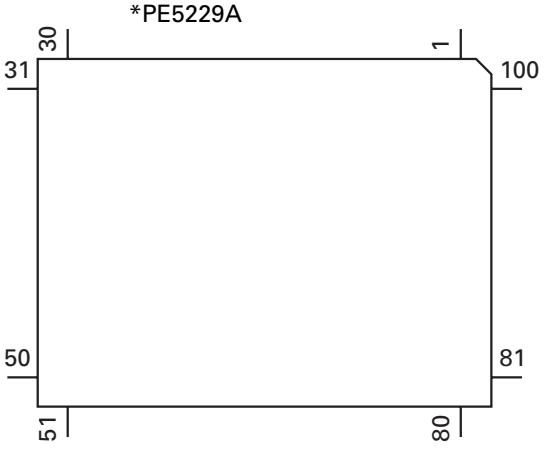


*PE5229A

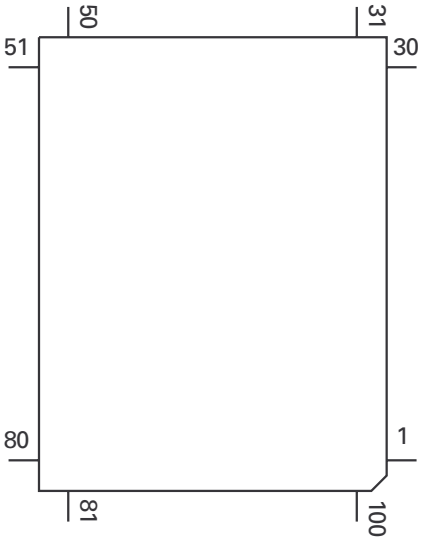


● **Pin Functions(PE5285A)**

Pin No.	Pin Name	I/O	Format	Function and Operation
1	LCDPOW	O	C	LCD power output
2	NC			Not used
3	ROMDATA	O	C	(ROM correction)data output
4	ROMCLK	O	C	(ROM correction)clock output
5	ROMCS	O	C	(ROM correction)chip select output
6-10	NC			Not used
11	$\overline{\text{RESET}}$			(FLASH use)
12, 13	XT2, 1			Clock input(Not used)
14	VSS			GND
15, 16	X2, 1			System clock input
17	REGOFF			Memory connection for the regulator output stabilization
18	REGC			Regulator operation specification signal
19	VDD			Power supply
20	NC			Not used
21	SYSPW	O	C	System power output
22	IPAUTO	O	C	IP auto ON setting state output(H:auto ON)
23	NC			Not used
24	IPPW	O	C	(IPBUS)Driver power supply output
25	DVSVSEL	O	C	IP-BUS line select(H:DVDS/L:NewAV-IN)
26	DVSSEL	O	C	IP-BUS line select(H:DVDS/L:IP-IN)
27	RMUTE	O	C	Rear mute output
28	MUTE	O	C	System mute output(for IP-BUS)
29	NC			Not used
30	PBSENS	I		Parking sense input
31	MSSRVD	O	C	(MS2)SRVDD power output(3.3v)
32	MSVD	O	C	(MS2)VD power output(8.0v)
33	MSMVD	O	C	(MS2)Main power supply power output(6.3v)
34	MSMCVD	O	C	(MS2)Microcomputer power output(3.3v)
35	IRQPWR	O	C	(MS2)IRQPWR output
36	XRRESET	O	C	(MS2)Reset output
37	TMODE	O	C	(MS2)TEST mode output
38	NC			Not used
39	TESTIN	I		Chip test program input
40	VSS			GND
41	VDD			Power supply
42	MSAMUTE	I		MS mute request
43	PILMPOW	O	C	Loading slot illumination power output
44	ILMPOW	O	C	Illumination power output
45	SWVDD	O	C	LED power supply output
46	NC			Not used
47	LCDDATA	O	C	(LED driver)Data output
48	LCDCLK	O	C	(LED driver)Clock output
49	LCDCE	O	C	(LED driver)enable output
50	LCDINH	O	C	(LED driver)inhibit output
51	CODEIN	I		Model discrimination (0:711 and 712)
52-60	NC			Not used
61	RMMUTE	O	C	Rear monitor mute output
62	NC			Not used
63	FMMUTE	O	C	Front monitor mute output
64	NC			Not used
65	TSK	O	C	Chip test(clock)
66	TSI	O	C	Chip test(data input)
67	TSO	O	C	Chip test(Data output)
68	SEIHIN	I		711(L)/712(H)discrimination input
69	MSIN	I		Master(H)/slave(L)select input
70	ISENS	I		Illumination sense input
71, 72	NC			Not used

Pin No.	Pin Name	I/O	Format	Function and Operation
73	TEST			IC test pin(FLASH use)
74	MODELIN	I		Model select input
75, 76	KEYDT0, 1	I		Key input 0, 1
77	VDSENS	I		MS2VD sense
78	DISCSET	I		(MS2)DISC sense input
79	NC			Not used
80	MEMHLD	O	C	Memory hold output(standby=L,active=H)
81	$\overline{\text{ADPW}}$	O	C	A/D converter power supply output
82	(VDD)			A/D power supply
83	(VDD)			A/D reference voltage
84	(GND)			A/D GND
85	RX	I		(IP-BUS)data input
86	TX	O	C	(IP-BUS)data output
87	NC			Not used
88, 89	NC			Not used
90	$\overline{\text{DSENS}}$	I		Detach sense
91	$\overline{\text{REMIN}}$	I		Remote control input
92	$\overline{\text{ASENS}}$	I		Acc sense input
93	$\overline{\text{BSENS}}$	I		Bup sense input
94	NC			Not used
95	MSTOSYS	I		MS2 control (Rx)
96	SYSTOMS	O	C	MS2 control (Tx)
97	NC			Not used
98	$\overline{\text{CSENS}}$	I		CLOSE sense
99	NC			Not used
100	PEE	O	C	Beep tone output

*PE5285A



Format	Meaning
C	C MOS

7.3 EXPLANATION

7.3.1 MECHANISM DESCRIPTION

● THE DRIVE MECHANISM SECTION

● Outlines of the hardwares

Driving Motor

The angular adjustment and monitor ejection control (position and angle) motor

Sensors

Photo interrupter for angular detection *2

Zero angle detection switch (L when the angle is 0 degrees)

● Electrical criteria

Sensor signals

Encoder pulse

DEGPUL1 : Pulse sensor 1 for angular detection

DEGPUL2 : Pulse sensor 2 for angular detection

Sensor signals

DEG0SW : monitor angle detection is 0 degrees

Control signals

MTRPW : Motor electrical power supply control (H when turned ON)

MTR1 : Motor control signal 1

MTR2 : Motor control signal 2

	Forward rotation	Reverse rotation	Brake	Standby
MTR1	H	L	H	L
MTR2	L	H	H	L

Motor terminal voltages (set by hardware settings)

* The voltage required to sustain a constant rotation rate.

High-speed mode : VMH = 6.5 – 10.0V

Low-speed mode : VML = 2.5 – 5.5V

● Operation Summary

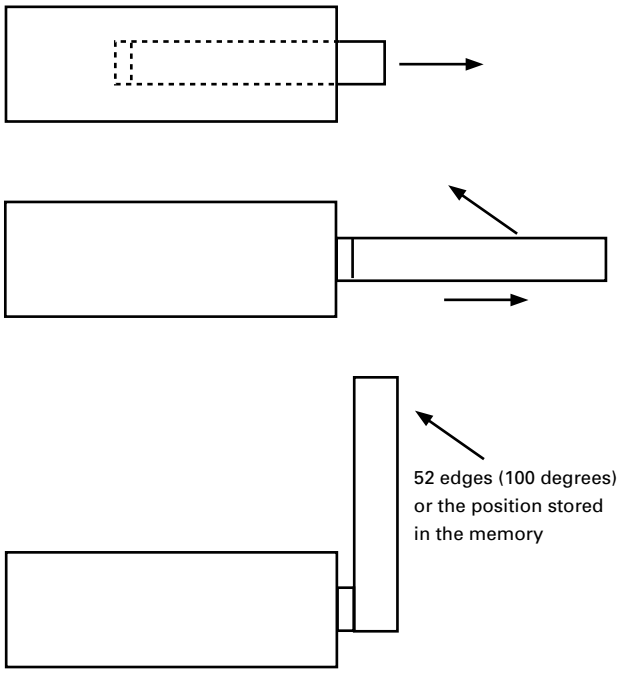
1. The back and forth movements, as well as the angular adjustment controls of the monitor are all driven by the operation of one motor.
2. In order to detect the startup angle of the motor, the photo interrupter will detect and count the pulse.
3. For a reset start, the retraction operation is performed first followed by the ejection operation resulting in a mounted condition (the angle of the monitor in a mounted condition is 100 degrees).
4. Angular adjustments are performed by using the ANGLE +/- keys (the ANGLE +/- keys are effective for adjusting angles, between 55 and 110 degrees in 28 increments).
   * With its origin at the point where the DEG0SW switches from H to L,, it is 30 edges to the 55 degree position, and 57 edges to the 110 degree position.
5. The monitor retraction operation is triggered by pressing the OPEN/CLOSE key (or when the ACC OFF state is attained when the automatic ejection and retraction setting is set to ON) (or if the ACC OFF key is pressed when the system is in the automatic ejection and retraction setting).
6. The back and forth movements are set to a high-speed mode and angular control is set to a low-speed mode, at all times (switch is set by the hardware).
7. Braking is continuous even after the motor has stopped.
8. The brake is applied once when the motor switches from one operating mode to another.

● **Ejection Operation**

1. When the OPEN/CLOSE key is pressed or when the ACC is turned ON, the motor is driven in a high-speed mode.

2. The motor is driven in a low-speed mode, when the DEG0SW is switched from L to H.

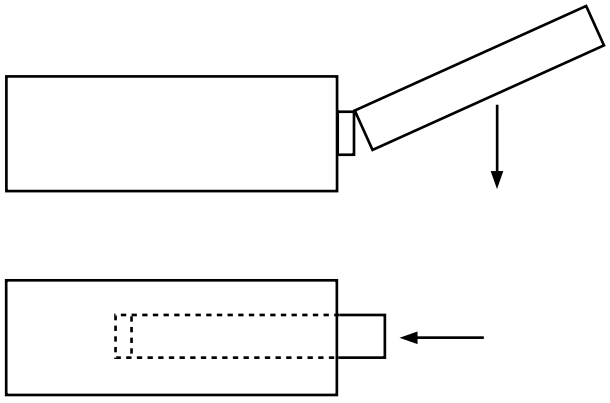
3. The counting of angular pulses starts from a point where the DEG0SW is switched from L to H, and the motor will stop when 52 edges (100 degrees), of the angular pulse is counted (brake mode).
   If a previous angle has been stored in the memory however, the motor will continue to operate until that angle has been attained. 54 edges (100 degrees) or the position stored in the memory



● **Retraction Operation**

1. The motor is driven in a low-speed mode when the OPEN/CLOSE key is pressed or after six seconds when an ACC OFF state is attained (when the automatic ejection and retraction setting is set to ON).

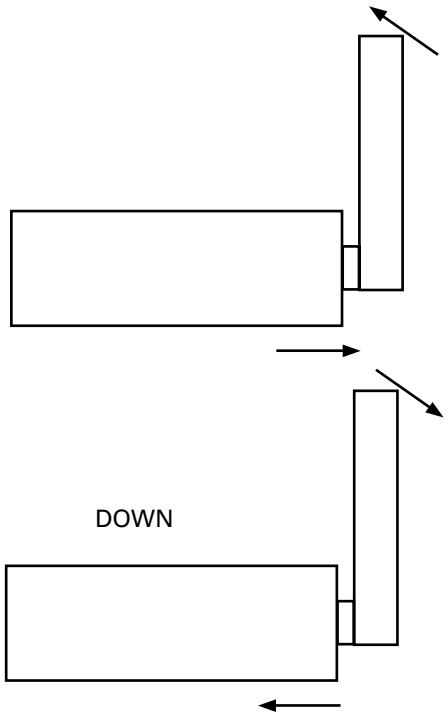
2. The motor is driven in a high-speed mode when the DEG0SW switches from H to L. The motor operation is brought to a halt when the angular pulse cannot be detected for a period of 500 ms (brake mode).



● Angular adjustments

1. When the UP key is pressed, the monitor is raised from its initial position (100 degrees), and will continue to rise until the key is released. The operation will stop one pulse after the release of the UP key.

2. The DOWN key operation results in similar motions.



● Protective Operation

1. During the horizontal ejection of the monitor, when the angular pulse cannot be detected for a period of 500ms, the retraction operation will be triggered.

2. During the startup (or angling down) of the motor, when the angular pulse cannot be detected for a period of 500ms, the brake mode will be triggered.

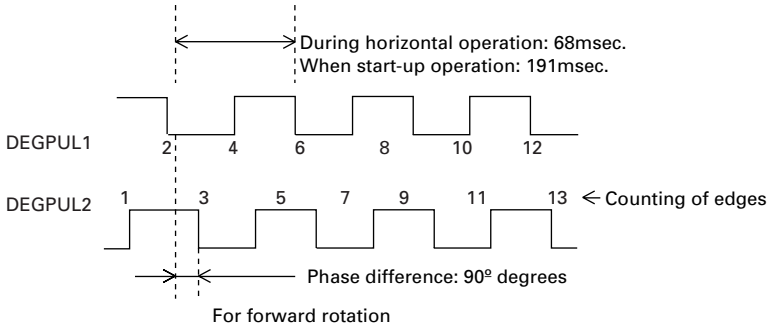
3. During the horizontal retraction of the monitor, when the angular pulse cannot be detected for a period of 500ms, the brake mode will be triggered.

● DISPLAY SECTION MECHANICAL OPERATION SPECIFICATION

● Direction of rotation

Forward rotation (ejection):
The phase of DEGPUL1 advances by 90 degrees.

Reverse rotation (retraction)
The phase of DEGPUL1 loses by 90 degrees.

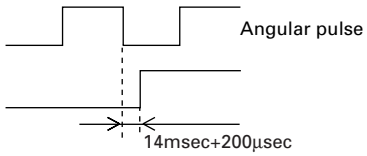


● Cautions

1. The angular position is continuously incremented, with the last position stored in the memory for use when the system is turned on again.

However, when the display is forcibly moved by the hand etc. ,the position is not memorized.

2. If a specified pulse is not detected during an operation, it is determined that an operational abnormality exists, and the operation will be halted at that point.
3. The brake operation is performed at 14ms + 200ms (← time required for monitoring the chattering) after the prescribed L angular pulses are detected.



● Operations of the drive section for each set mode

Mode setting

Automatic ejection and retraction setting: ON

ACC operation mode	In OPEN condition or when in ACC OFF condition	During OPEN operation or when in ACC OFF condition	During CLOSE operation or when in ACC OFF condition	In CLOSE condition or when in ACC OFF condition
ACC OFF→ON	In OPEN condition ↓ Remaining in OPEN condition	–	–	In CLOSE condition ↓ OPEN operation ↓ Reverse operation
ACC ON→OFF	In OPEN condition ↓ ↓ 6 sec Forward operation ↓ CLOSE	Continued OPEN operation ↓ Reverse operation ↓ 6 sec Continued OPEN operation ↓ CLOSE	Continued CLOSE operation ↓ CLOSE	In CLOSE condition ↓ ↓ Remaining in CLOSE condition
Final position memory	OPEN	OPEN	CLOSE	CLOSE

Mode setting

Automatic ejection and retraction setting: OFF

ACC operation mode	In OPEN condition or when in ACC OFF condition	During OPEN operation or when in ACC OFF condition	During CLOSE operation or when in ACC OFF condition	In CLOSE condition or when in ACC OFF condition
ACC OFF→ON	In OPEN condition ↓ Remaining in OPEN condition	–	–	In CLOSE condition ↓ Remaining in CLOSE condition
ACC ON→OFF	In OPEN condition ↓ ↓ Remaining in OPEN condition	Continued OPEN operation ↓ ↓ Reverse operation	Continued CLOSE operation ↓ ↓ CLOSE	CLOSE condition ↓ ↓ Remaining in CLOSE condition
Final position memory	OPEN	OPEN	CLOSE	CLOSE

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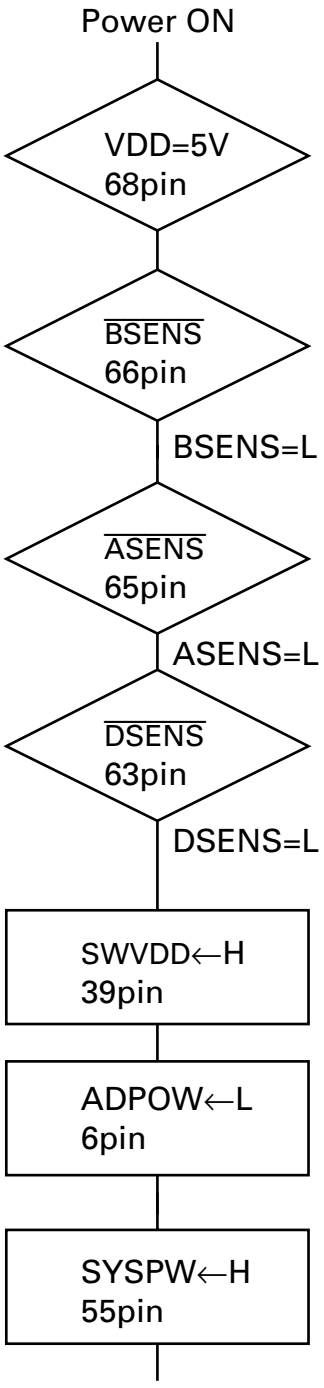
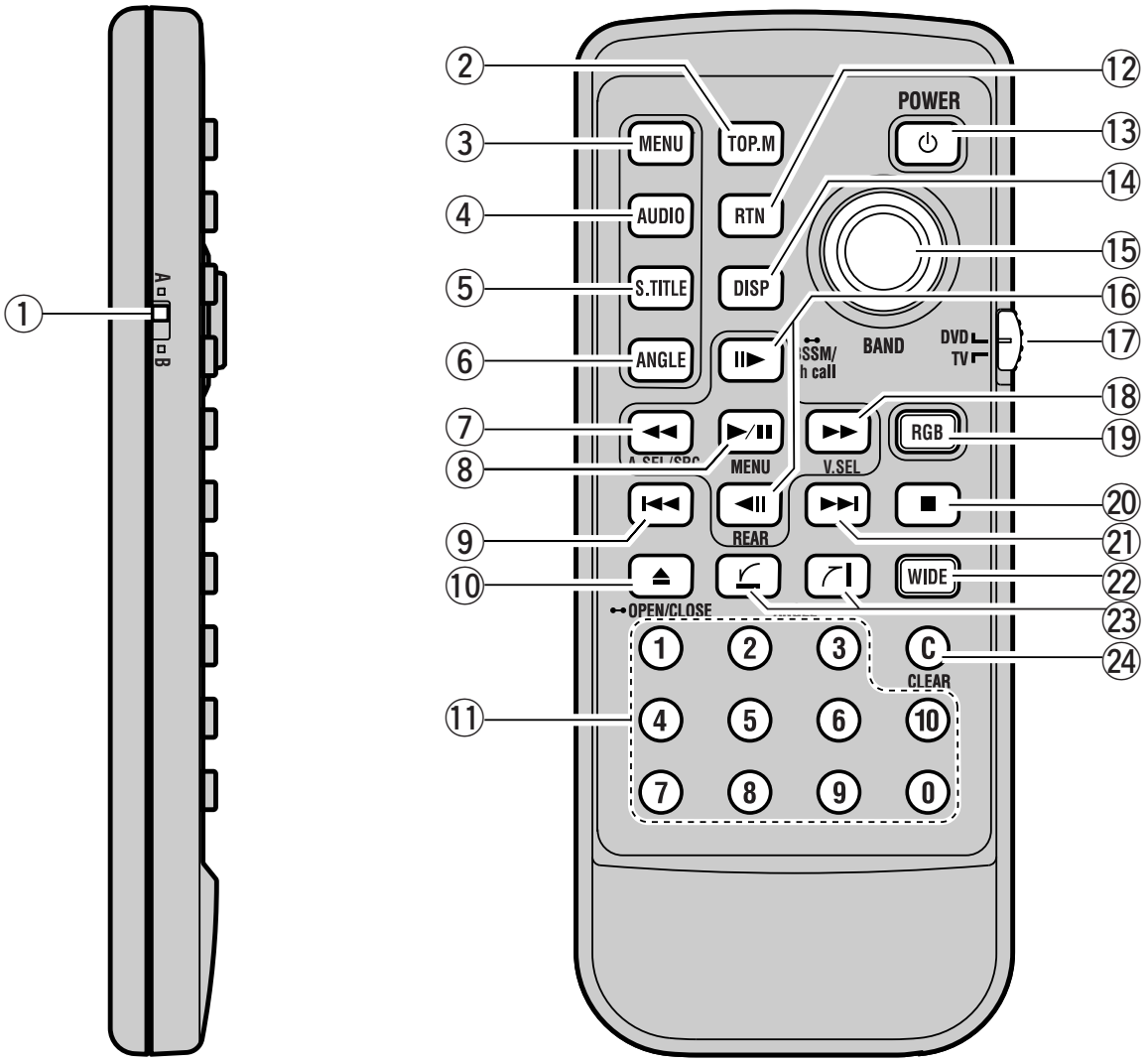
7.3.2 OPERATIONAL FLOW CHART



Completes power-on operation.

8. OPERATIONS AND SPECIFICATIONS
8.1 OPERATIONS

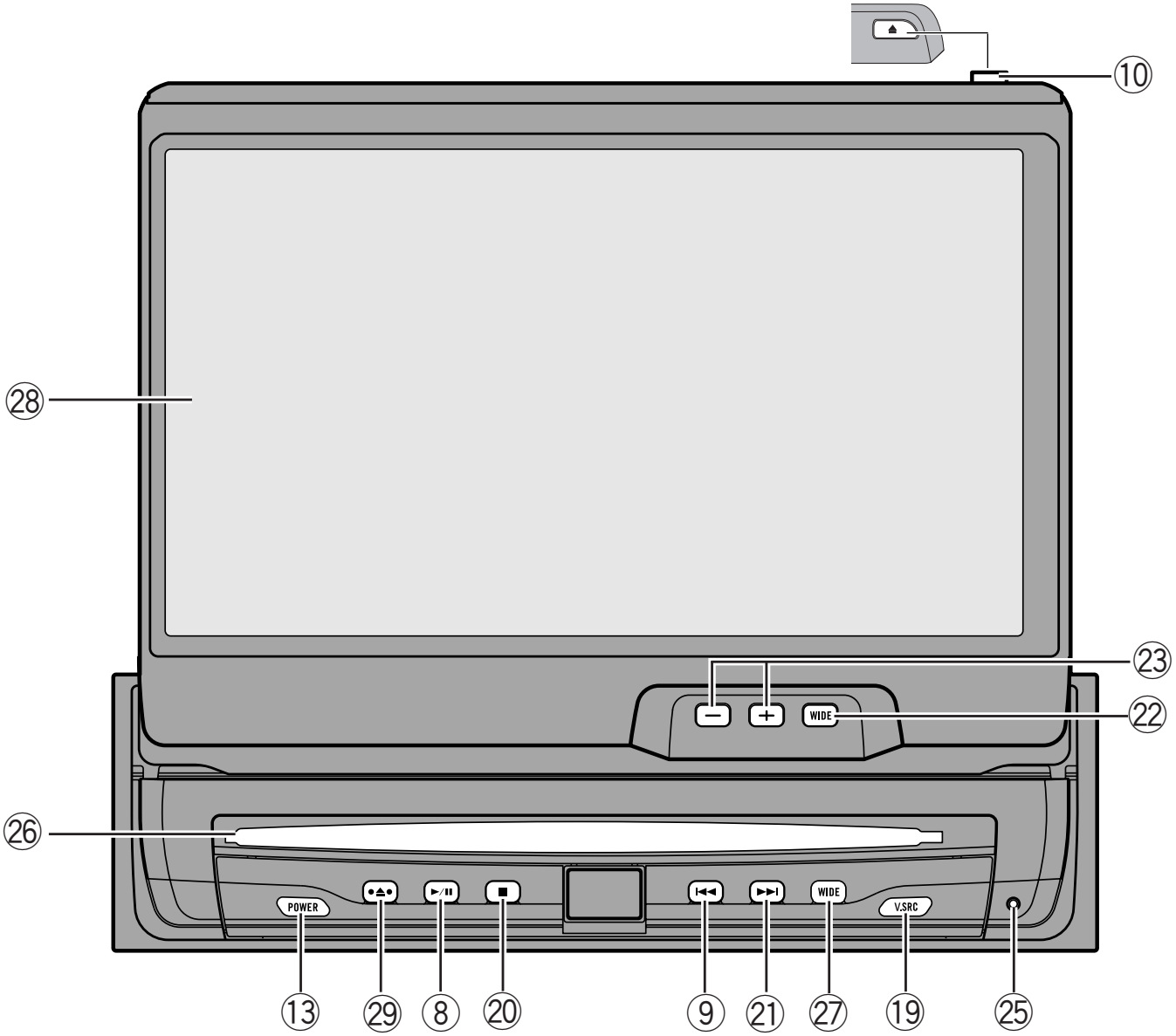
Key Finder
Remote Controller



① Remote control code selection switch
② TOP MENU button
③ MENU button
④ AUDIO button
⑤ SUBTITLE button
⑥ ANGLE button
⑦ REVERSE (◄◄) button
⑧ PLAY/PAUSE (►/II) button
⑨ PREVIOUS (I◄◄) button
⑩ OPEN/CLOSE (≜) button
⑪ Number buttons
⑫ RETURN button
⑬ POWER button
⑭ DISPLAY button
⑮ Joystick
⑯ STEP (◄II)/(II►) buttons
⑰ Remote control operation mode switch
⑱ FORWARD (►►) button
⑲ RGB button
⑳0STOP (■) button
㉑ NEXT (►►I) button
㉒ WIDE button
㉓ ANGLE (◿)/(◸) buttons
㉔ CLEAR button
㉕ RESET button
㉖6Disc loading slot
㉗ V.SOURCE button
㉘ Display
㉙ Eject button

This Product

The following diagram shows the display when it is deployed.



Note:

- This product plays one standard 12 cm (5 in.) or 8 cm (3 in.) single disc at a time. Do not use an adapter when playing 8 cm (3 in.) disc.
- Do not insert anything into the Disc Loading Slot other than discs that are compatible with this product.
- The DVD function can be turned ON/OFF with the disc remaining in this product.
- A disc left partially inserted after ejection may incur damage or fall out.

Switching Power ON/OFF

Switching Power ON

Press the SOURCE button on the Head Unit.

Press repeatedly until DVD is selected, and the disc starts playing.

Note:
- If you were previously playing a DVD, playback of that disc resumes from where you left off.
- With some discs, a menu may be displayed.

Switching Power OFF

Press the SOURCE button for 1 second on the Head Unit.

Power to the Head Unit switches OFF.

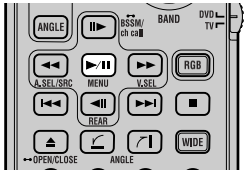
When using a rear display

- Even if the source selected with the head unit is not DVD, if you switch power to this product ON with the POWER button, you can watch the DVD picture from this product on the rear display.
- Regardless of whether the head unit is switched ON/OFF, you can switch power to this product ON/OFF.

Precautions

- When you have switched power to this product ON by pressing the POWER button, be sure not to forget to switch power to this product OFF. If you switch power to this product OFF after switching to DVD video display, the display shows that power to this product has been switched OFF.
- When you eject a source disc (CD or MD) selected with the head unit, power to the head unit switches OFF. Depending on the connection method, the picture on the rear display may disappear.

Disc (DVD/Video CD/CD) Playback



Press the PLAY/PAUSE (▶/II) button.

The playback mark ( ) is displayed for 4 seconds and the disc starts playing.

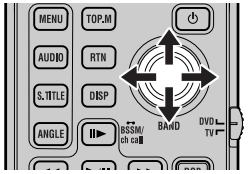
Note:
- Pressing the PLAY/PAUSE (▶/II) button when a disc is playing, pauses playback.
- If the last disc played was a DVD, playback starts from the point on that disc where you stopped play previously. With some discs, a menu may be displayed and playback may not be possible from where you left off previously.

Working with the Menu Screen

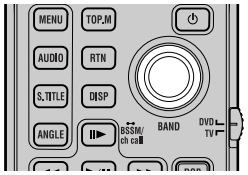
DVD Video CD

When DVDs offering menu or Video CDs featuring the PBC (Playback Control) function start playing, a menu is displayed.

With DVDs

1 

Use the joystick to select the desired MENU option.

2 

Click the joystick.

Playback starts from the selected menu option.

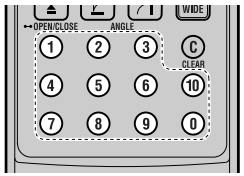
■ To Display the Menu

You can display the menu by pressing the MENU button or TOP MENU button while a disc is playing. Pressing either of these buttons again lets you start playback from the location selected from the menu. For details, refer to the instructions provided with the disc.

Note:
- The way to display the menu differs depending on the disc.

Continued overleaf

With Video CDs



Press the number buttons to select a desired menu option.

Playback starts from the selected menu option.
Operation with the joystick is not possible.

■ To Display the Menu

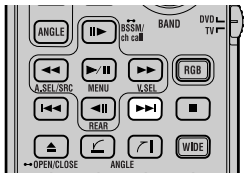
You can display the menu by pressing the RETURN button while PBC playback. For details, refer to the instructions provided with the disc.

Note:

- When menu are two or more pages long, press the PREVIOUS (I◄◄)/NEXT (►►I) button to switch between displays.
- To play a disc without using a menu (without PBC playback), when the disc is stopped press the appropriate number button to select the desired track. To return to PBC playback, stop playback and press the PLAY/PAUSE (►/II) button.

Chapter and Track Advance/Return

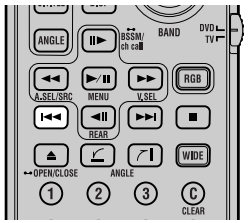
Skipping to the Next Chapter/Track



During play, press the NEXT (►►I) button .

Chapter/track numbers are displayed for 8 seconds and you advance to the next chapter/track.

Returning to the Previous Chapter/Track



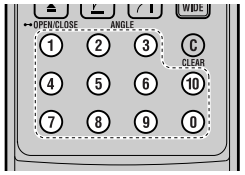
During play, press the PREVIOUS (I◄◄) button .

Chapter/track numbers are displayed for 8 seconds and you return to the beginning of the current chapter/track.

Press the PREVIOUS (I◄◄) button twice in succession takes you to the beginning of the chapter/track before the current chapter/track.

Specifying Title/Chapter/Track (Direct Search)

Specifying Title

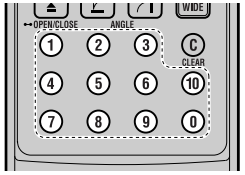


Press the number button corresponding to a desired title number when the disc is stopped.

Title number is displayed for 8 seconds and playback starts from the selected title.

To select 3, press button 3.
To select 10, press buttons 10 and 0 in order.
To select 23, press buttons 10, 10 and 3 in order.

Specifying Chapter

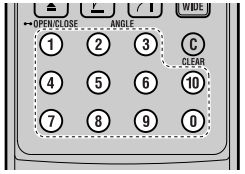


Press the number button corresponding to a desired chapter number during playback.

Chapter number is displayed for 8 seconds and playback starts from the selected chapter.

To select 3, press button 3.
To select 10, press buttons 10 and 0 in order.
To select 23, press buttons 10, 10 and 3 in order.

Specifying Track



Press the number button corresponding to a desired track number.

Track number is displayed for 8 seconds and playback starts from the selected track.

To select 3, press button 3.
To select 10, press buttons 10 and 0 in order.
To select 23, press buttons 10, 10 and 3 in order.

Note:

- With some discs, the prohibited mark "⃠" may be displayed and operation may not be possible.
- With Video CD, Direct Search is not possible during PBC playback.

Disc Fast Forward/Reverse

Fast Forward

1

During play, continue pressing the FORWARD (►►) button.

The fast forward mark ( ) is displayed while pressing the button and disc fast forward is performed.

2 **Release the FORWARD (►►) button at the point you want to watch/listen.**

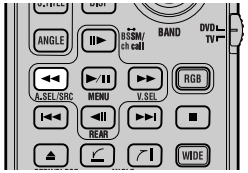
Playback resumes from that point.

Note:

- If you continue pressing the FORWARD (►►) button for 5 seconds, the color of the fast forward mark ( ) changes from white to blue. When this happens, fast forward continues even if you release the FORWARD (►►) button. To resume playback at a desired point, press the PLAY/PAUSE (►/II) button.
- If you fast forward to the end of a CD, fast forward continues from the beginning of the disc.
- Fast forward may not be possible at certain locations on some discs. If this happens, normal playback automatically resumes.

Fast Reverse

1



During play, continue pressing the REVERSE (◄◄) button.

The fast reverse mark ( ) is displayed while pressing the button and disc fast reverse is performed.

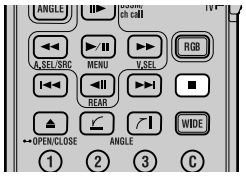
2 **Release the REVERSE (◄◄) button at the point you want to watch/listen.**

Playback resumes from that point.

Note:

- If you continue pressing the REVERSE (◄◄) button for 5 seconds, the color of the fast reverse mark ( ) changes from white to blue. When this happens, fast reverse continues even if you release the REVERSE (◄◄) button. To resume playback at a desired point, press the PLAY/PAUSE (►/II) button.
- If you fast reverse to the beginning of a CD, normal playback resumes.
- Fast reverse may not be possible at certain locations on some discs. If this happens, normal playback automatically resumes.

Stopping Playback

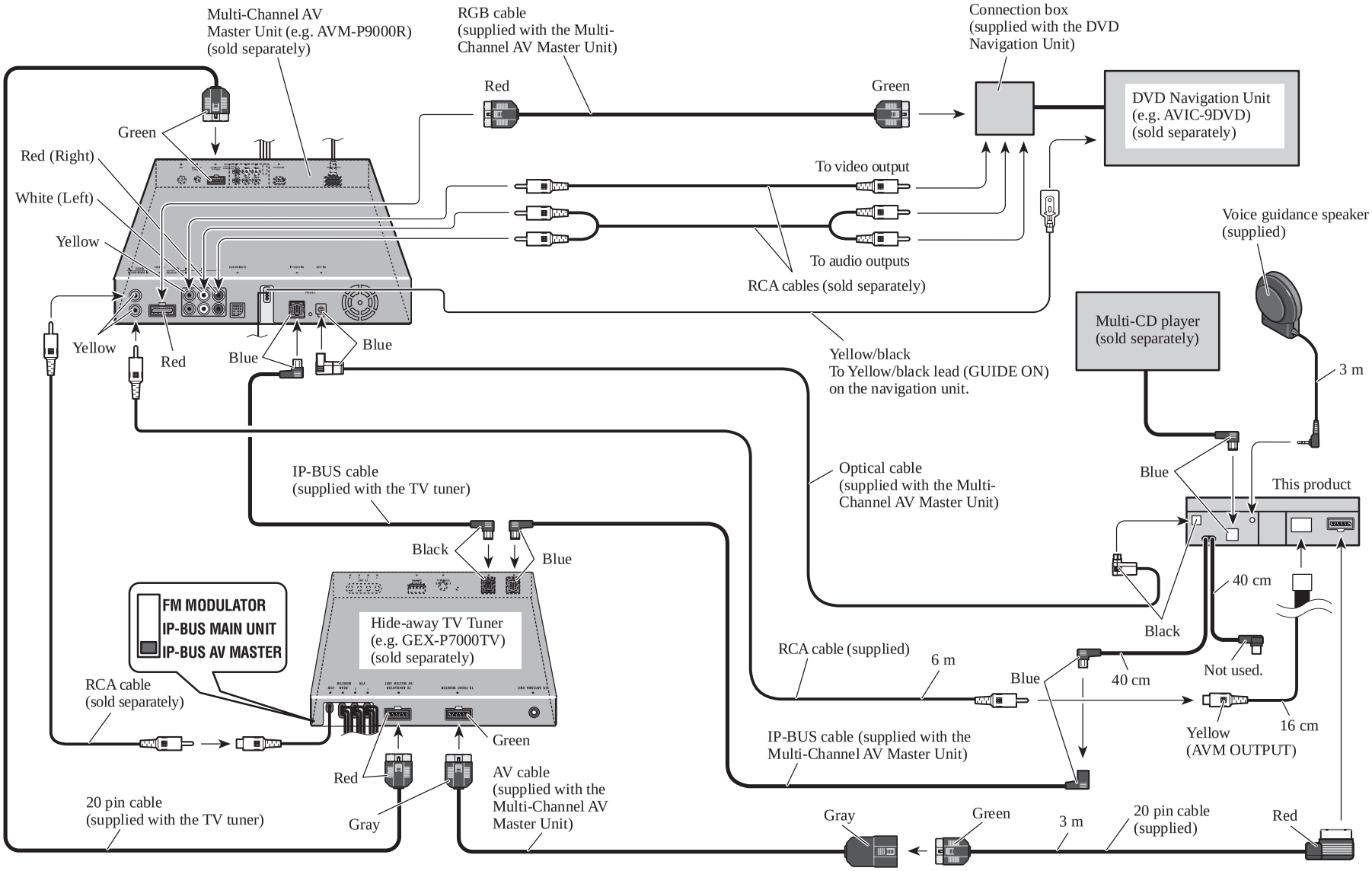


Press the STOP (■) button.

Note:

- When you stop DVD or Video CD playback (during PBC playback only) by pressing the STOP (■) button, that location on the disc is memorized enabling playback from that point when you play the disc again.

● CONNECTION DIAGRAM



8.2 SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 – 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 5 A
Backup current .....Less than 12 mA
Dimensions
(DIN)
(chassis) ..... 180 (W) × 50 (H) × 160 (D) mm
[7-1/8 (W) × 2 (H) × 6-1/4 (D) in]
(nose) ..... 188 (W) × 58 (H) × 31 (D) mm
[7-3/8 (W) × 2-1/4 (H) × 1-1/4 (D) in]
(D)
(chassis) ..... 178 (W) × 50 (H) × 165 (D) mm
[7 (W) × 2 (H) × 6-1/2 (D) in]
(nose) ..... 170 (W) × 46 (H) × 26 (D) mm
[6-3/4 (W) × 1-3/4 (H) × 1 (D) in]
(display) ..... 169 (W) × 125 (H) × 16 (D) mm
[6-5/8 (W) × 4-7/8 (H) × 5/8 (D) in]
Weight ..... 2.0 kg (4.4 lbs)

Display

Screen size/Aspect ratio ..... 7 inch wide/16:9
(effective display area: 154 × 87 mm)
Pixels ..... 336,960 (1,440 × 234)
Type ..... TFT active matrix, transmissive type
Color system [For U.S. and Canadian models]
..... NTSC Compatible
Color system [Other area models]
..... NTSC/PAL Compatible
Operating temperature range ..... –20 to +60 °C
Storage temperature range ..... –40 to +85 °C
Angle Adjustment ..... 55 — 110°
Initial setting angle: 100°

Audio

(with DVD, at Sampling frequency 96 kHz)
Frequency response ..... 5 – 44,000 Hz
Signal-to-noise ratio [For U.S. and Canadian models]
..... 97 dB (1 kHz) (IHF-A network)
(CD: 96 dB (1 kHz) (IHF-A network))
Signal-to-noise ratio [Other area models]
..... 97 dB (1 kHz) (IEC-A network)
(CD: 96 dB (1 kHz) (IEC-A network))
Dynamic range ..... 96 dB (1 kHz)
(CD: 95 dB (1 kHz))
Distortion ..... 0.008 % (1 kHz)
Output Level ..... 1.0 V (1 kHz, 0 dB)
Number of channels ..... 2 (stereo)

Player

System ..... DVD-Video, Video CD,
Compact disc audio system
Usable discs .... DVD-Video, Video CD, Compact disc
Signal format
..... Sampling frequency: 44.1/48/96 kHz
Number of quantization bits: 16/20/24; linear
Region Number
..... For U.S. and Canadian models: 1
For European models: 2
For Southeast Asian models: 3
For South American and Oceanian models: 4

Video

Output level ..... 1.0 Vp-p/75 Ω (±0.2 V)

Note:

- Specifications and the design are subject to possible modification without notice due to improvements.